THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR APRIL 1868.

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TO READERS AND CORRESPONDENTS.

We must express our acknowledgments to our numerous contributors for the valuable papers with which they keep us constantly supplied, and ask the indulgence of those whose articles have been postponed from want of room. In the selection of articles, we regard it to be our duty to give precedence to those of most practical value.

All articles intended for the *Original Department* of this Journal must be communicated to it *exclusively*. As original articles *are accepted only on this condition*, we consider those who favour us with contributions to be bound in honour to conform to it.

Contributors who wish their articles to appear in the next number, should forward them before the 1st of May.

Compensation is allowed for original articles, and reviews, *except* when illustrations or extra copies are required. A *limited* number of extra copies will be furnished to authors *if the request for them be made when the communication is sent.*

The following works have been received:—

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Volume the Fiftieth. London: Longmans, Green & Co., 1867.

Guy's Hospital Reports. Edited by C. Hilton Fagge, M. D., and Arthur E. Durham. Third Series. Vol. XIII. London: John Churchill & Sons, 1868.

On the Pathology and Treatment of Albuminuria. By William H. Dickinson, M. D. Cantab., F. R. C. P., Assistant Physician to St. George's Hospital and to the Hospital for Sick Children. London: Longmans, Green & Co., 1868.

Stone in the Bladder: with Special Reference to its Prevention, Early Symptoms, and Treatment by Lithotrity. By Walter J. Coulson, F. R. C. S., etc. etc. London: John Churchill & Sons, 1868.

The Diseases of the Prostate, their Pathology and Treatment; comprising the Jacksonian Prize Essay for the year 1860. By Sir Henry Thompson, F. R. C. S., Surgeon Extraordinary to H. M. the King of the Belgians, Surgeon and Prof. of Clinical Surgery to Univ. Coll. Hosp., etc. Third edition. London: John Churchill & Sons, 1868.

A Third and Fourth Series of Fifty Cases of Ovariotomy, with remarks on the situation and length of the incision required in this operation. By T. Spencer Wells, F. R. C. S., Surgeon in Ordinary to her Majesty's Household, Surgeon to the Samaritan Hospital, etc. London, 1867. (From the Author.)

A Case in which Ovariotomy was twice successfully performed on the same Patient. By T. Spencer Wells, F. R. C. S., etc. London, 1867. (From the Author.)

Vindication of the Present State of Aural Surgery. By a Member of the New Sydenham Society. London: John Churchill & Sons, 1864.

Études sur les Medications Arsenicale et Antimoniale, et sur les Maladies du Cœur. Par le Docteur Lucien Papillaud (Henri Almès) Chevalier de l'Ordre Royal du Christ de Portugal, etc. etc. Paris: J. B. Baillière et Fils, 1867.

Die optischen Fehler des Auges mit ihren Folgen, Asthenopie und Strabismus. Von John Zachariah Laurence, F. R. C. S., etc. Aus dem Englischen ins Deutsche übersetzt und mit erweiternden Zusätzen versehen von Dr. August Korst, praktischer Arzt zu Kreuznach. Kreuznach, 1868. (From the Translator.)

A Practical Treatise on the Diseases of Women. By T. Gaillard Thomas, M. D., Professor of Obstetrics and Diseases of Women and Children in the College of Physicians and Surgeons, New York; Physician to Bellevue Hospital, etc. etc. With two hundred and nineteen illustrations. Philadelphia: Henry C. Lea, 1868.

Atlas of Venereal Diseases. By A. Cullerier, Surgeon to the Hôpital du Midi, Member of Surgical Society of Paris, Chevalier of Légion d'Honneur, etc. Translated from the French, with Notes and Additions, by Freeman J. Bumstead, M. D., Prof. of Venereal Diseases in the Coll. of Phys. and Surgeons, New York, etc. With about 150 beautifully coloured figures, on 26 plates. Part I. Philadelphia: Henry C. Lea, 1868.

Pennsylvania Hospital Reports. Vol. I. 1868. Phila.: Lindsay & Blakiston.

Obstetric Clinic: a Practical Contribution to the Study of Obstetrics, and the Dis-

eases of Women and Children. By GEORGE T. ELLIOT, Jr., A. M., M. D., Professor of Obstetrics and Diseases of Women and Children in Bellevue Hospital Med. College, etc. etc. New York: D. Appleton & Co., 1868.

Plastics: a new Classification and a brief Exposition of Plastic Surgery. By DAVID PRINCE, M. D. Philadelphia: Lindsay & Blakiston, 1868.

Annual Abstract of Therapeutics, Materia Medica, Pharmacy, and Toxicology, for 1867: followed by an original memoir on Gout, Gravel, and Urinary Calculi, by A. BOUCHARDAT, Prof. of Hygiene to Faculty of Medicine, Paris; Member of the Imperial Academy of Medicine. Translated and edited by M. J. DE ROSSET, M. D., Adjunct to Prof. of Chemistry, University of Maryland, etc. Phila.: Lindsay & Blakiston, 1868.

The Diagnosis, Pathology, and Treatment of Diseases of Women, including the Diagnosis of Pregnancy. By GRAILY HEWITT, M. D. Lond., Prof. of Midwifery and Diseases of Women, University College, etc. First American from the second London edition, revised and enlarged. 116 illustrations. Phila.: Lindsay & Blakiston, 1868.

Spermatorrhœa: its Causes, Symptomatology, Pathology, Diagnosis, Prognosis, and Treatment. By ROBERTS BARTHOLOW, M. D., Prof. Mat. Med. and Therap. in Med. Coll., Ohio. Second edition, revised and augmented. N. Y.: Wm. Wood & Co., 1867.

Chronic Diseases of the Larynx, with Special Reference to Laryngoscopic Diagnosis and Local Therapeutics. By Dr. ADELBERT TOBOLD, Lecturer in the University of Berlin. Translated from the German and edited by GEORGE M. BEARD, A. M., M. D., Lecturer on Nervous Diseases in the University of New York. With an Introduction on the History and Art of Laryngoscopy and Rhinoscopy, Rhinitis, Inhalations, and Electrization applied to Diseases of the Air-Passages; and an Appendix by the Editor. Illustrated by 44 engravings on wood. New York: Wm. Wood & Co., 1868.

Treatise on the Diseases of the Eye, including the Anatomy of the Organ. By CARL STELLWAG VON CARION, M. D., Professor of Ophthalmology in the Imperial Royal University of Vienna. Translated from the third German edition and edited by CHARLES E. HACKLEY, M. D., Surgeon to New York Eye and Ear Infirmary, Physician to N. Y. Hospital, Fell. N. Y. Acad. of Med., etc., and D. B. ST. JOHN ROOSA, M. D., Clinical Professor of Diseases of Eye and Ear in Med. Dep't of Univ. of City of New York, etc. With an Appendix by the Editors. Illustrated by ninety-six wood-engravings and eighteen chromo-lithographs. New York: William Wood & Co., 1868.

Lectures on Orthopedic Surgery. By LOUIS BAUER, M. D., Prof. of Anat. and Clin. Surg., etc. Second edition, revised and augmented, with eighty-four illustrations. New York: William Wood & Co., 1868.

The Principles and Practice of Obstetrics. By GUNNING S. BEDFORD, A. M., M. D., Professor of Obstetrics, Diseases of Women and Children, and Clinical Obstetrics in the University of New York, etc. Illustrated by four coloured lithographic plates and ninety-nine wood-engravings. Fourth edition, carefully revised throughout and enlarged. New York: William Wood & Co., 1868.

Pathological Anatomy of the Female Sexual Organs. By JULIUS M. KLOB, M. D., Prof. at Univ. of Vienna. Translated by JOSEPH KAMMERER, M. D., and BENJAMIN F. DAWSON, M. D. New York: Moorhead, Simpson & Bond, 1868.

Light: its Influence on Life and Health. By FORBES WINSLOW, M.D., D.C.L. Oxon. (Hon.), etc. etc. New York: Moorhead, Simpson & Bond, 1868.

Felix von Niemeyer's Clinical Lectures on Phthisis. Translated, from the second German edition, by J. L. PARKE. New York: Moorhead, Simpson & Bond, 1868

Photographs of Diseases of the Skin, taken from Life, under the superintendence of HOWARD F. DAMON, A. M., M. D., Fellow of the Massachusetts Medical Society, etc. etc. Series I., Nos. 1 to 6. Boston: James Campbell, 1867.

Diseases of the Heart: their Diagnosis and Treatment. By DAVID WOOSTER, M.D., etc. San Francisco: H. H. Bancroft & Co., 1867.

A Manual of Inorganic Chemistry, arranged to facilitate the Experimental Demonstration of the Facts and Principles of the Science. By CHARLES W. ELIOT, Professor of Analytical Chemistry and Metallurgy in the Massachusetts Institute of Technology, and FRANK H. STORER, Prof. of General and Industrial Chemistry in Mass. Instit. of Technology. Second edition, revised. N. Y.: Ivison, Phinney, Blakeman & Co., 1868.

The Treatment of Diseases of the Throat and Lungs by Inhalations, with a new Inhaling Apparatus. By EMIL SIEGLE, M. D. Translated from the second German edition by S. NICKLES, M. D. Cincinnati: R. W. Carroll & Co., 1868.

Transactions of the Medical Society of the State of New York, for the year 1867. Albany, 1867.

Transactions of the Medical Society of West Virginia, including Proceedings of the Medical Convention held at Fairmount, April 10, 1867. Wheeling, 1868.

Proceedings of the American Pharmaceutical Association, at the Fifteenth Annual Meeting, held at New York City. Philadelphia, 1867.

Proceedings of the Academy of Natural Sciences of Philadelphia. October, November, and December, 1867.

The Physician's Daily Pocket Record. By S. W. BUTLER, M. D. Phila., 1868.

An Inquiry into the Influence upon Health of Anthracite Coal when used as Fuel for warming Dwelling-houses, with some Remarks upon Special Evaporating Apparatus. By GEORGE DERBY, M. D., etc. Boston: A. Williams & Co., 1868.

Alphabetical Lists of Persons Deceased, Born, and Married in the City of Providence, during the year 1866. Prepared by EDWIN M. SNOW, M. D., City Registrar. Providence, 1867. (From the Author.)

Pharmacy of the Cinchonas, and of Podophyllum, with suggestions upon their therapeutic uses and tests of quality. By EDWARD R. SQUIBB, M. D., of Brooklyn, N. Y. Philadelphia, 1868.

Address before the Philadelphia County Medical Society. By WILLIAM MAYBURRY, M. D. Philadelphia, 1867.

The Psychopathic Hospital of the Future: an Address delivered at the laying of the corner-stone of the General Hospital for the Insane of the State of Connecticut, June 20, 1867. By PLINY EARLE, A. M., M. D., Superintendent of State Hospital for Insane at Northampton, Mass. Utica, 1867.

An Address delivered before the Berkshire Medical Institute, November 24, 1868. By PLINY EARLE, A. M., M. D. Utica, 1867.

Fifteenth Annual Report of the Pennsylvania Training School for Feeble-Minded Children. Media, Delaware County. Philadelphia, 1868.

Twelfth Annual Report of the Trustees of the State Lunatic Hospital at Northampton. October, 1867. Boston, 1867.

Annual Report of the Trustees and Superintendent of the Wisconsin State Hospital for the Insane, for the fiscal year ending September 30, 1867. Madison, Wis., 1867.

Thirteenth Annual Report of the Board of Trustees and Officers of the Southern Ohio Lunatic Asylum, of Ohio, for the year 1867. Columbus, 1868.

Report of the Pennsylvania Hospital for the Insane, for the year 1867. By THOMAS S. KIRKBRIDE, M. D., Physician-in-Chief and Superintendent. Philadelphia, 1868.

Annual Report of the Managers of the Western Pennsylvania Hospital, for 1867. Pittsburg, 1868.

Reports of the Trustees and Superintendent of the Butler Hospital for the Insane, presented to the Corporation at their Annual Meeting, Jan. 22, 1868. Providence, 1868.

Fourth Annual Report of the Board of State Charities of Massachusetts. January, 1868. Boston, 1868.

Forty-first Annual Report of the Board of Inspectors of the Western Penitentiary of Pennsylvania, for 1867. (From Dr. D. N. Rankin.)

The following Journals have been received in exchange:—

Revue de Thérapeutique Médico-Chirurgicale. Par A. MARTIN-LAUZER, M. D. No. 24, 1867; No. 1, 5, 1868.

Annales Médico-Psychologiques. Par MM. les Docteurs BAILLARGER, CERISE et LUNIER. September, November, 1867.

Le Mouvement Médical: Journal de la Santé Publique. Rédacteur-en-Chef, N. PASCAL. Nos. 49, 50, 51, 52, 1867; and Nos. 2, 3, 4, 5, 7, 8, 9, 1868.

Gazette Médicale de Paris. Nos. 33 to 52, 1867; No. 1, 1868.

Gazette Hebdomadaire de Médecine et de Chirurgie. Rédacteur-en-Chef, le Docteur A. DECHAMBRE. Nos. 33 to 43, 1867.

Archives de Physiologie Normale et Pathologique. Publiés par MM. BROWN-SÉQUARD, CHARCOT, VULPIAN. No. 1. Janvier—Février, 1868.

La Tribune Médicale. M. MARCHAL (de Calvi), Rédacteur-en-Chef. Nos. 16, 18, 21.

Giornale Italiano delle Malattie Veneree e delle Malattie della Pelle. Compilato e diretto dal dott. G. B. SORESINA, Ispettore Sanatario di Milano. Fascicolo 12, 1867; Fascicolos 1, 2, 1868.

The Half-Yearly Abstract of the Medical Sciences. Vol. XLVI. July—December, 1867. London: John Churchill & Sons, 1867.

The Retrospect of Medicine. Edited by W. BRAITHWAITE, M. D., and JAMES BRAITHWAITE, M. D., Lond. Vol. LVI. July—December, 1867. London: Simpkin, Marshall & Co., 1867.

The British and Foreign Medico-Chirurgical Review. January, 1868.

The Medical Times and Gazette. January, February, March, 1868.

The British Medical Journal. Nos. 363 to 375. 1868.

The Lancet. January, February, March, 1868.

Journal of Cutaneous Medicine and Diseases of the Skin. Edited by ERASMUS WILSON, F. R. S. January, 1868.

Edinburgh Medical Journal. December, 1867; January, February, 1868.

The Glasgow Medical Journal. January, February, March, 1868.

Dublin Quarterly Journal of Medical Science. February, 1868.

Medical Press and Circular. January, February, March, 1868.

Canada Medical Journal. Edited by G. E. FENWICK, M. D., and F. W. CAMPBELL, M. D. January, February, March, 1868.

The Boston Medical and Surgical Journal. Edited by SAMUEL ABBOT, M. D., and LUTHER PARKS, Jr., M. D. January, February, March, 1868.

The American Journal of Insanity. Edited by the Medical Officers of the New York State Lunatic Asylum. January, 1868.

The New York Medical Journal. Edited by WM. A. HAMMOND, M. D., and E. S. DUNSTER, M. D. February, March, 1868.

The Medical Record. January, February, March, 1868.

The Medical Gazette. January, February, March, 1868.

The Quarterly Journal of Psychological Medicine and Medical Jurisprudence. Edited by WILLIAM A. HAMMOND, M. D. January, 1868.

The Buffalo Medical and Surgical Journal. Edited by JULIUS F. MINER, M. D. December, 1867; January, February, 1868.

The Medical and Surgical Reporter. Edited by S. W. BUTLER, M. D., and D. G. BRINTON, M. D. January, February, March, 1868.

The Cincinnati Lancet and Observer. Edited by EDWARD B. STEVENS, M. D., and JOHN A. MURPHY, M. D. January, February, March, 1868.

The Western Journal of Medicine. Edited by THEOPHILUS PARVIN, M. D. January, February, March, 1868.

The Chicago Medical Examiner. Edited by N. S. DAVIS, M. D. January, February, March, 1868.

The Chicago Medical Journal. December, 1867; January, February, March, 1868.

The St. Louis Medical and Surgical Journal. Edited by M. L. LINTON, M. D., and G. BAUMGARTEN, M. D. January, March, 1868.

The Saint Louis Medical Reporter. Edited by J. S. B. ALLEYNE, M. D., and O. F. POTTER, M. D. January, February, March, 1868.

The Detroit Review of Medicine and Pharmacy. Edited by G. P. ANDREWS, M. D., E. W. JENKS, M. D., and THEO. A. MCGRAW, M. D. January, February, March, 1868.

The Iowa Medical Journal. Edited by J. C. Hughes, M. D. Jan.—April, 1868.

The Humboldt Medical Archives. Edited by Drs. A. HAMMER and J. C. WHITEHILL. December, 1867; January, February, 1868.

The Leavenworth Medical Herald. Edited by C. A. LOGAN, M. D., and T. SINKS, M. D. January, February, 1868.

The Cincinnati Medical Repertory. Edited by J. A. THACKER, M. D. January, February, March, 1868.

Atlanta Medical and Surgical Journal. Edited by J. G. WESTMORELAND, M. D., and W. F. WESTMORELAND, M. D. January, February, 1868.

The Nashville Journal of Medicine and Surgery. Edited by W. K. BOWLING, M. D. December, 1867; January, February, 1868.

The Galveston Medical Journal. Edited by GREENSVILLE DOWELL, M. D. Dec., 1867.

The Pacific Medical and Surgical Journal. Edited by HENRY GIBBONS, M. D., and HENRY GIBBONS, Jr., M. D. December, 1867; January, February, March, 1868.

The New Orleans Journal of Medicine. Edited by Drs. S. M. BEMISS and W. S. MITCHELL. January, 1868.

Half-Yearly Compendium of Medical Science. Edited by S. W. BUTLER, M. D., and D. G. BRINTON, M. D. Part I. January, 1868. Philadelphia, 1868.

The American Journal of Pharmacy. Published by Authority of the Philadelphia College of Pharmacy. Edited by WM. PROCTER, Jr. January, March, 1868.

The Druggists' Circular and Chemical Gazette. January, February, March, 1868.

The American Journal of Science and Arts. January, March, 1868.

The American Naturalist. January, February, March, 1868.

The Dental Cosmos. Edited by J. H. MCQUILLEN, D. D. S., and GEORGE J. ZIEGLER, M. D. January, February, 1868.

The American Journal of Dental Science. Edited by A. SNOWDEN PIGGOT, M. D., and F. G. S. GORGAS, M. D., D. D. S. January, February, March, 1868.

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XVII. Pennsylvania Hospital Reports. Edited by J. M. DaCosta, M. D., and William Hunt, M. D. Vol. I. 8vo. pp. 420. Philadelphia: Lindsay & Blakiston, 1868. 473
XVIII. Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Vol. L. (Second Series, Vol. XXXII.) 8vo. pp. lxiv., 649. London: Longmans. Green & Co., 1867. 487
XIX. Transactions of the Epidemiological Society of London. Vol. II. Part II. Sessions 1864–5, and 1865–6. 8vo. pp. 280. London, 1867. 495
XX. Report on Leprosy by the Royal College of Physicians. Prepared for her Majesty's Secretary of State for the Colonies. With an Appendix. 4to. pp. 244. London, 1867. 499

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XXI. On the Physiological Action of the Calabar Bean (Physostigma Venenosum, Balfour). By Thomas R. Fraser, M. D., Assistant to the Professor of Materia Medica in the University of Edinburgh. From the Transactions of the Royal Society of Edinburgh. Vol. XXIV. 4to. pp. 73. Edinburgh, 1867. 502

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THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR APRIL 1868.

ART. I.—*On Amputation at the Knee-joint, and at the Knee.* By JOHN H. BRINTON, M. D., one of the Surgeons to St. Joseph's Hospital.

THE propriety of disarticulation at the knee-joint is still a mooted point in the practice of American Surgery. By a majority of surgeons, the operation is, perhaps, regarded with suspicion. Many who in a given case of injury or disease would unhesitatingly amputate through the thigh, would in a similar case shrink from the performance of amputation at the knee-joint. The question naturally arises as to the cause of this reluctance. To a certain extent, it is probably owing to the existing dread of operative interference with so large a joint, and possibly, also, to a lack of information regarding the healing process of flaps formed upon articular surfaces. But more especially, we think, is the unpopularity of amputation at the knee-joint to be traced to a feeling of uncertainty as to the usefulness of the resulting stump, and to a strong misgiving regarding the immediate issue of the operation.

The surgeon who is called upon to select his point of amputation in the case of a mutilated or diseased leg, instinctively asks himself, whether amputation at the knee-joint affords his patient a better chance of recovery than amputation in the continuity of the thigh—and if it does, what will be the serviceableness of the resulting stump. Questions such as these cannot be answered by reference to purely theoretical opinions, but must be met by the production of authentic and carefully observed cases.

The object of the writer in the present paper is to submit the report of seven cases, in which he has performed amputation at the knee-joint, with known results. In several other instances occurring in military practice, he has performed the same disarticulation, but as the termination of these

latter cases is unknown to him, he has not included them in the accompanying tables. In addition, he presents a series of cases, previously unreported, which have happened chiefly in the practice of surgeons in Philadelphia and its vicinity. A brief reference is also made to those well-authenticated instances of knee amputations, which have from time to time been reported in our own and in foreign journals. From the aggregate of cases thus obtained, an attempt has been made to deduce the mortality rate of the operation in question.

In a supplementary table will be found the reference to many European cases, most of which have been handed down from author to author. The difficulty of obtaining access to the original reports, their meagre and often inaccurate details, and the unsatisfactory nature of second-hand quotations, unfit these latter cases for the analytical purposes of this paper. Indeed it is very much to be doubted whether they possess any value other than that of a purely historical character.

Before attempting to examine into the merits of disarticulation of the knee, it may here be well to allude briefly to the more important papers which have from time to time appeared, bearing upon amputation at the knee-joint—and in this connection it must be observed that a distinction is to be made between amputation at the knee-joint and amputation at the knee. The former is a pure disarticulation, or at most a disarticulation accompanied by the removal of the articular cartilages of the femur, or of a small portion of the condyles. The latter, frequently spoken of in England as "Carden's amputation," is a more extensive operation. In fact, it is not an amputation at the knee-joint at all, but rather an amputation immediately above the joint; for in Mr. Carden's operation, although the anterior flap is cut from the integuments, and extends for some distance below the patella, yet the femur is sawn across at a point varying from one to two and a half inches above the articulation.

The removal of the lower extremity at the knee-joint is an operation of ancient date. It is vaguely alluded to by Hippocrates, Guy de Chauliac, and by Guillemeau (1612). It is stated that it was performed by Fabricius Hildanus (1632), but this is denied by Textor and Zeis. In later times it was advocated by Hoin, Brasdor, and Blandin, but was not generally received. Its introduction into modern surgery is undoubtedly due to the efforts of Velpeau, who published a memoir upon amputation at the knee in 1829. Of the fourteen authentic cases of amputation at the knee-joint collected by Velpeau, there were thirteen cures.[1] The results, however, of the same operation at the hands of this illustrious surgeon, as set forth in his treatise on operative surgery published in 1832, failed to realize his first encouraging anticipations. In his article upon amputation at the knee he then states, "I fear therefore that I may have exaggerated the

[1] Archives générales de Médecine, t. xxiv. p. 44.

safety of this operation when I attempted to revive it in 1830. It remains proved, however, that the objections which have been made against it have no solid foundation."

For many years after the publication of the above, little appears to have been done or published relative to knee-joint amputation. In November, 1852, Dr. Stephen Smith, in an admirable paper, in the *New York Journal of Medicine*, reported a case of disarticulation performed by Dr. Parker, of New York. He at the same time presented, in a collected form, all of the known and reported American cases, as well as the authentic foreign instances of the same operation.

In January, 1856, Dr. Markoe published in the same journal his well-known paper on amputation at the knee-joint, in which he reports six additional cases which had been mainly treated in the New York Hospital. The advantages of disarticulation at the knee, as compared with thigh amputations, are said by Dr. Markoe to be: 1. The useful character of the resulting stump; 2. The lessened shock of operation; 3. Lessened section of tissues; 4. The non-exposure of the muscular interspaces, and the diminished risk of suppurative inflammation of the thigh; 5. The comparatively few ligatures required; 6. The preservation of the attachments of the thigh muscles; 7. The absence of muscular retraction; 8. The escape from the necessity of sawing the femur, and the lessened risk of osteomyelitis and exfoliation.

In the number of the *New York Journal of Medicine* for November, 1856, Dr. Markoe published an article entitled "Syme's Amputation through the Knee, in Chronic Disease of the Joint," in which he advocated the performance of disarticulation at the knee in many cases of joint disease in which amputation of the thigh had previously been resorted to.

In May, 1845, Mr. Syme published in the *London and Edinburgh Monthly Journal of the Medical Sciences* an article upon "amputation of the knee." In the course of his remarks, Mr. Syme alludes to the heavy mortality which accompanies amputation of the thigh, from 50 to 70 per cent., and then states that having seen the circular incision give way to the flap, and having witnessed the results of the various operations in the hands of the most skilful surgeons, he is led to believe that there must be something wrong in dividing the thigh-bone through its shaft, instead of through its condyles.

The occasion for thigh amputation Mr. Syme states to be, in the order of frequency: 1. Diseases of the knee-joint; 2. Compound fractures of the leg and thigh; 3. Tumours growing from the bones of the leg and thigh. In knee-joint diseases, to use his expression, the "warrant for the amputation lies in the bone and not in the soft parts." In compound fractures of the leg, and in injury and diseases of the thigh, the greatest length of the thigh should be preserved, so that "taking merely the morbid condition into account, all the cases admitting of amputation at or below

the middle of the thigh-bone would admit of the operation being performed through the condyles." Mr. Syme adds that when the operation is performed through the condyles, the medullary membrane is not disturbed, exfoliation of the bone will be avoided, and the patient will preserve a more useful stump. In support of his views he adduces two cases in which he had amputated at the knee.

The operation practised by Mr. Syme consisted in a division of the integuments on a line with the patella and the formation of a large flap from the calf of the leg. The condyles were sawn across and the patella was removed. Influenced by Mr. Syme's recommendation, his operation, in all its essential respects, was employed by Mr., now Sir William Fergusson, Dr. Williamson, Mr. Jones, of Jersey, Mr. Potter, of Newcastle, and others, who have reported their cases. At the hands especially of Mr. Fergusson, the operation was attended with success.

In 1864 Mr. Carden, of Worcester, published, in the *British Medical Journal* for April, a paper on amputation by the single flap, a process practised by him since 1846. In this article Mr. Carden reports thirty cases of amputation through the condyles of the femur, and one case which may be regarded as a proper disarticulation.

The success of Mr. Carden's operation appears, from his report, to have been very great; thus, of four cases of primary amputation after accident, one died, and three recovered; of three secondary amputations after accident, all recovered. He also reports twenty-four cases of amputations for pathological causes, such as diseases of the knee-joint, cancer, and gangrene. Of these, four died and twenty recovered. The large percentage of these recoveries would seem to be in a great degree owing to the character of the operation. This consisted in the reflection of a round or semi-oval flap of skin and fat from the front of the joint, the section of the soft tissues down to the bone, and the division of the femur strictly above the plane of the muscles, thus forming a flat-faced stump. When union was effected, the line of the cicatrix was drawn upwards and backwards, and escaped pressure in locomotion. The patella was removed in the operation.

By comparison of Mr. Carden's operation with Mr. Syme's, it will be observed that in both the thigh-bone was sawn through directly above the condyles, and in both the patella was removed. There was, however, this difference between the two: in Carden's operation the flap was formed of the integuments covering the front of the joint, and containing no muscular tissue, was not liable to slough, and united readily, forming a stump well suited to the application of an artificial limb. In Syme's operation, on the other hand, the flap formed from the muscles of the calf was not so well suited for a covering for the bone as in the former case. Indeed, the superiority of Mr. Carden's procedure over his own is admitted by Syme himself, in the *Edinburgh Medical Journal* for April, 1866, in which he

states that the flap formed from the calf of the leg "proved very inconvenient, and so counterbalanced the benefit anticipated, that this operation soon fell into disuse." Mr. Syme considers that Carden's operation offers these advantages, viz: An ample anterior integumental flap, a short posterior flap, a transverse division of the vessels, a dependent opening to the wound, and an excellent position for the cicatrix. The resulting stump is in every respect a serviceable one, since the "skin over the stump instead of becoming thinner acquires additional thickness, so that the patients could rest upon it, just as they do after amputation at the ankle."

Amputation at the knee-joint proper.—This operation was performed first in Scotland, at the Glasgow Infirmary, in 1847. In England, it was first practised by Mr. Lane, at St. Mary's Hospital, London, in September, 1857. In reporting this case,[1] Mr. Lane dwells upon the advantages which this operation possesses over the ordinary process of amputating through the condyles of the femur. These advantages he believed were apparent in the decreased mortality (for the knee-joint 31 per cent.), and in the increased usefulness of the resulting stumps. Mr. Lane operated by a long anterior integumental flap, and by a short posterior flap, retaining the patella, and the whole of the condyles, with their incrusting cartilages. Mr. Lane has been followed in this method of operating by Sir William Fergusson, Mr. Coulson, of St. Mary's Hospital; Mr. Pollock, and Mr. T. Holmes, of St. George's, Mr. Holthouse, of Westminster, and Mr. Cooper Foster, of Guy's Hospital, and others.

In France the disarticulation at the knee has met with comparatively little favour, the later results of the operation apparently falling short of the sanguine anticipations which had been formed at the time of its revival by Velpeau. In 1854 M. Maisonneuve[2] performed this amputation upon a woman twenty-two years of age, and in his report of the case he states that "this operation has, during the last ten years, been performed only once or twice in Paris; but this proscription he does not consider merited. He regards this operation as less dangerous than amputation of the thigh, and it possesses this immense advantage that it leaves the patient in a far preferable condition for the application of an artificial limb."

The judgment of so distinguished a surgical authority as Malgaigne, regarding the merits of this disarticulation, is equally decided, and is thus pithily expressed.[3] "Encore une de ces opérations trop légèrement condamnées, et qui, lorsqu'on a le choix, mérite toute préférence sur l'amputation de la cuisse dans la continuité." "L'immense avantage qui suit cette désarticulation de l'amputation dans la continuité, c'est qu'elle conserve aux amputés le libre jeu de l'articulation coxo-fémorale."

[1] Lancet, vol. ii., 1857, p. 324, and p. 474.
[2] Gaz. Méd. de Paris, Sept. 2, 1854.
[3] Manuel de Méd. Op., Paris, 1849, p. 316.

In Germany the exarticulation of the knee is but little practised, and chiefly by Textor, of Wurzburg, and in the surgical clinic at Tubingen. In Russia cases are reported by Heyfelder, of St. Petersburg; Vanzetti, of Charkow; and Mazanowski, of the Imperial service.[1] Prof. Heyfelder, who has operated in six cases, believes that amputation at the knee is better, and can be more readily borne by the patient, than thigh amputation.

Military practice.—In European military practice, the results of amputation at the knee-joint have, on the whole, been unsatisfactory. During the Crimean war the operation was performed in the British service six times primarily, with three deaths; and once secondarily, with a fatal result. But we are informed by Dr. Macleod that "to four of the cases operated on in camp, with the details of which I am acquainted, the operation was not applicable, as the femur was more or less injured, so as to call for the removal of part of it; hence the operation, although termed amputation through the knee, was in reality low amputation of the thigh, such as that now employed in acute swelling of the articulation." In weighing the arguments for and against the operation, Dr. Macleod is inclined to believe that the advantages of this operation more than counterbalance its disadvantages, and he adds that if the cases were selected for the operation, in which the femur was uninjured, and a sufficient flap could be obtained, and the operation performed early, then he firmly believed that he could coincide with Malgaigne in the opinion which we have already quoted.

The opinion of Mr. Longmore, as to the merits in military surgery of the amputation we are discussing, is decided. In a short criticism upon the operation published in the *British Medical Journal* for January 5, 1867, he expresses the hope that "in any future war, amputation of the knee-joint will be performed more frequently than it has hitherto been performed in our army, and with results at least as favourable as those recorded in the United States army reports."

In the Russian Service, during the Crimean War, but two cases of amputation at this joint are reported by Pirogoff. Both died, and a like fatal result obtained in the two cases reported by Demmé as having occurred during the Italian war.

In the French service, the results of disarticulation at the knee appear to have been particularly disastrous. M. Legouest, at page 735 of his *Traité de Chirurgie d'Armée*, indulges in a most sweeping denunciation of the operation, and dismisses its consideration in this summary manner:—

"La désarticulation du genou est une mauvaise opération, plus grave que l'amputation de la cuisse dans la continuité, et qui doit être rejetée de la pratique. On peut en juger par ces chiffres."

[1] Canstatt, Jahresbericht., 1857, p. 218.

	Operations.	Deaths.	Rate per 100.
Paris hospitals—Malgaigne . . .	3	3	100.0
" " Velpeau . . .	6	4	66.0
Eastern campaign—English army . .	7	4	57.2
" " French army . .	78	71	91.0
Total	94	82	87.0

From the figures in this table, and more especially from those which represent the statistics of the French army in the East, it would seem that M. Legouest has reason to regard the disarticulation at the knee, as practised by French surgeons, with suspicion. But in his utter condemnation of the operation, we think he has gone too far; and we are unwilling to receive his decision as the final verdict of the operation. Indeed, from his own figures, the results of amputation at the knee-joint, disastrous as they are, still appear to be more fortunate than those of amputation in the continuity of the thigh. This is evident from an examination of his table comprising the results of thigh amputations in the French army during the same campaigns. Thus we find that of 1678 thigh amputations, 1544 died, a mortality rate of 92.2, against 91.0, the mortality rate of the French disarticulations at the knee. We therefore confess ourselves unable to understand M. Legouest's reasons for his unmeasured proscription of the latter operation.

By the military surgeons of the United States army, during the late rebellion, amputation at the knee-joint was frequently practised. In Circular No. 6, Surgeon-General's Office, Washington, November 1, 1865, Surgeon Otis states that up to October, 1864, one hundred and thirty-two cases of amputation at the knee-joint have been reported to the Bureau.

"Of these, fifty-two recovered and sixty-four died. In six cases amputation of the thigh was subsequently performed, with three recoveries and three deaths. In ten cases the result is undetermined. These figures are encouraging, and if we look at the primary amputations alone, the result is still more gratifying. Of forty-nine cases of primary operations at the knee-joint, thirty-one recovered and sixteen died; while two underwent reamputation, of whom one recovered, and one, a tuberculous subject, died. This gives a percentage of mortality in primary amputations at the knee-joint of 34.9. The mortality in primary amputation at the lower third of the thigh is much larger than this; indeed it has been already indisputably proved by the Crimean statistics, and by M. Malgaigne, that the mortality in amputation augments in exact proportion as the incisions approach the trunk."

In a communication from Surgeon Otis, received since the preceding pages were penned, the following additional information has, with the permission of the Surgeon-General, been furnished to the writer. The whole number of cases of knee-joint amputations recorded in the Surgeon-General's office is two hundred and eleven. Of these ninety-six recovered, one hundred and six died, one is still under treatment, and in eight the result is undetermined. In twelve cases reamputation of the thigh was resorted to, in eight successfully, in three fatally, and one is still under treatment. Of one hundred and ninety-one cases in which the date of

operation is recorded, one hundred and eleven were primary. The average mortality of the whole number of cases is thus 50.2, a percentage greater than that exhibited in Circular No. 6. This increase in the death-rate Dr. Otis states is due to the fact that the later operations have been collected from special reports, and refer chiefly to primary cases which died before reaching general hospitals.

If we compare these results of amputation at the knee-joint, embodied in Surgeon Otis's statistics, with those of thigh amputations performed during the same period, it is apparent that the advantages are greatly on the side of the former. Thus, Surgeon Otis reports fifteen hundred and ninety-seven terminated cases of amputation at the thigh, of which five hundred and sixty-eight recovered, and one thousand and twenty-nine died, a mortality of 64.43 per cent. Of these cases the precise date of amputation was ascertained in one thousand and sixty-one instances; four hundred and twenty-three were primary, and six hundred and thirty-eight were intermediate or secondary. For the former the mortality rate was 54.13; for the latter 74.76.

The conclusions thus arrived at from the examination of so large a number of cases occurring in military practice, tend greatly to strengthen the convictions which we had already formed from our personal observation. We believe that in a proper case, namely, where the gunshot injury is confined to the bones of the leg; or where a ball has opened the knee-joint, without injury to the femur; or where there is extensive laceration of the soft parts of the leg involving the main vessels, amputation at the knee-joint affords the best chance of safety to the patient; *provided*, a sufficient flap of integuments can be obtained. Indeed, even should the condyles of the femur be slightly injured, we are inclined to go further, and coincide in the opinion expressed by Dr. S. W. Gross, that in such a case the operation is not necessarily contraindicated. The character of the flap, however, must always be carefully considered, for where it is integumental and obtained from the anterior or lateral portions of the joint, the patient's chances of recovery are, we think, increased.

That the views above expressed as to the value of amputations at the knee-joint are not exaggerated is, we think, attested by the great number of operations (two hundred and eleven) which have been reported to the Medical Bureau. Dr. Hamilton, in his treatise on Military Surgery, when speaking of this amputation says: "We have ourselves operated many times in the field at this point, and without being able to state the results precisely, we have reason to believe that the operation has been more successful than amputations either immediately above or below the joint." He also adds, "that of the relative safety of this operation we have no doubt."

With this brief review of the operation of amputation at the knee-joint, the following cases are presented. The first seven were operated upon by the

writer; the succeeding thirty-eight, operated upon by the various surgeons whose names are given, have not previously been reported, although in one or two instances short clinical notes appeared in the reports of hospital practice, before the termination of the case. The authority for the histories of these unreported American cases is manuscript information, obtained generally from the surgeon, occasionally from the patient; and personal examination by the writer.

CASE 1.—W. W., aged 11, admitted into St. Joseph's Hospital, Philadelphia, November 23d, 1859, with a compound comminuted fracture of both bones of the right leg, just below the knee-joint, the result of a railroad accident. He had lost a good deal of blood, and the leg was irretrievably ruined; it was therefore decided to remove it at once. As his condition was not good, it was exceedingly desirable to perform such an operation as would be attended with the least amount of shock. At eight o'clock in the evening, about one hour and a half after the accident, I performed amputation at the knee-joint by the double flap method; the anterior flap being purely integumental, while the posterior contained the heads of the gastrocnemius muscle. The condyles of the femur were left with their articular cartilages, and the patella was not disturbed. Ligatures were applied upon the anterior and posterior tibial, and the two sural arteries, and coaptation of the flaps effected. November 24th. Twenty-eight hours after the operation, at midnight, secondary hemorrhage set in, which, although temporarily arrested by stypties, recurred again at 7 A. M., November 25th, to such an extent as to necessitate the opening of the wound. This I accordingly did, breaking up the commencing adhesions, when I found that the bleeding proceeded from the enlarged and divided vessels of the synovial membrane, particularly from those distributed in the intercondyloid region; seven or eight ligatures were applied, and the lips of the wound were again brought together. The child, who was much exhausted by loss of blood, gradually reacted under stimulus and good diet. December 5th. The flaps having failed to unite a second time, the condyles projected at either angle of the wound, and granulations formed freely upon the bone up to the line of the articular cartilages. These latter now softened and became thinner, so as to render distinctly visible the vessels upon the surface of the bone beneath. Granulations formed rapidly upon the crucial ligaments. December 10th. The last ligature separated. December 13th. During the preceding week the cartilage covering the outer condyle disintegrated molecularly, and its place was supplied by healthy granulations from the bone; the cartilage covering the inner condyle gradually loosened from its attachments, and was removed by the forceps in an entire layer. The surface of the bone beneath was covered with florid, healthy granulations, which by the 25th of December had attained to the same height as those growing from the other portions of the bone, so that at this time, the entire granulating surface of the stump presented a uniform, smooth level. Cicatrization now rapidly ensued, and on the 23d of February the child left the hospital with a well healed, solid stump. The convalescence of this patient had been somewhat retarded by the formation of one or two abscesses upon the thigh, which were opened.

I examined the patient in the early part of 1866, and subsequently in 1867. He is now fully grown, and in good health. He walks with a crutch from preference, his circumstances having hitherto prevented the

purchase of an artificial limb. The stump is firm, round, not painful upon pressure, and possesses great power of rotation, abduction, and adduction. The patella is drawn upwards about two inches towards the outer surface of the limb.

CASE 2.—W. McG., aged 10, admitted into St. Joseph's Hospital October 17, 1865, with a compound comminuted fracture of the tibia and fibula immediately below the knee. He had been run over by a street car in the afternoon. The hemorrhage had been considerable, and the shock of the injury was severe. On the same evening I removed the limb at the knee-joint, making a long anterior and a short posterior integumental flap. The heads of the gastrocnemius were shaved off, and the popliteal artery was cut squarely through. Ligatures were applied upon this vessel, two articular arteries, and upon the popliteal vein. The condyles and patella were left, and the articular cartilages were not disturbed. Nearly perfect union by first intention ensued; a very small slough formed over the external condyle, a portion of the cartilage of which came away in one layer, when granulation from the subjacent bone rapidly took place. The last ligature separated on November 4th, and the boy was discharged from the hospital cured on December 18th, with a perfectly rounded stump, capable of great motion and powerful rotation.

This child was subsequently admitted into the hospital with a simple fracture of the same thigh, caused by a fall from a wagon. The stump in the interim was sound and painless. The fracture of the femur quickly united, and he left the hospital well.

CASE 3.—Mrs. Ellen P., aged 22, of New Jersey, admitted as a private patient into St. Joseph's Hospital July 19th, 1866, with a large pulsating tumour of the right foot. The pulsation was most marked on the outside, just below the external malleolus, and could also be felt upon the inner side near the point of the heel. The internal saphena vein was greatly enlarged, and a purring sound could be distinctly heard over it, almost as high up as the knee. No cause could be assigned for this affection; the patient stated that it had existed for about two years, and that hemorrhage from an ulcer on the outside of the tumour frequently occurred to an alarming and weakening extent.

Finding that simultaneous pressure upon the anterior and posterior tibial arteries controlled the pulsation in the tumour, I tied, on the 26th of July, these vessels in their middle third. The operation was troublesome, from the fact that even the smallest veins, when divided, bled with an arterial jet. I at the same time tied the internal saphena vein, and the venæ comites of the arteries, all of which pulsated. After these ligations, the tumour decreased in size and the pulsation in it ceased.

On the 28th of July the pulsation in the tumour returned, and hemorrhage occurred from the ulcerated point on its surface. This was for the time controlled by pressure and styptics. The styptic which I employed was one which I have used largely in military practice with marked success, and which was originally suggested to me by Doctor Pancoast. It consisted of castile soap, one drachm; carbonate of potash, two drachms; and alcohol, four ounces, applied upon a pledget of lint. On July 31 I removed the limb at the knee-joint. I selected this point for amputation on account of the diseased condition of the vessels which my previous operations, as well as auscultation at the time, informed me extended above the

middle of the leg. The operation was precisely similar to the one described in the preceding case, by the formation of a long anterior and short posterior integumental flap; the condyles and their cartilages, and the patella were left untouched. The popliteal artery was cut short, and the end of the ischiatic nerve excised. Seventeen ligatures were applied, all but three or four upon veins, which were greatly enlarged. The anæsthetic used was chloric ether. But little blood was lost, and the patient rallied promptly and perfectly from the shock of operation. On the following morning I found her, to my great surprise, sitting up in bed and knitting.

Union throughout four-fifths of the wound took place by first intention. The suppuration from the wound was moderate. The last ligature, that upon the popliteal artery, came away on the 23d of August, and early in September the patient returned to her home well, and with a perfect stump, possessing the usual great mobility peculiar to that amputation. In October, 1867, Mrs. P. was fitted with an artificial limb, upon which she walked with facility.

CASE 4.—On the 2d of April, 1867, I was called to see Mr. B., a gentleman aged 53, whose leg had been caught in the belting of machinery, by which it had been dragged through the opening in the floor for the belt, producing a compound dislocation of the ankle-joint, with fracture of the tibia and fibula. The dislocation was reduced, and every effort was made to save the limb. These efforts, however, proved unsuccessful, and accordingly it was determined, in consultation with Drs. Gross, S. W. Mitchell, and J. C. Norris, to remove the limb. The condition of the parts forbidding amputation in continuity of the leg, on the 7th of April, I amputated at the knee, by the process employed in the two foregoing cases. The patient's morale and general condition were fair, with the exception of an occasional irregular action of the heart. Ether was very cautiously administered. He bore the operation well; lost very little blood, and reacted promptly; about forty minutes, however, after the completion of the operation, and after he had been placed back in his bed the heart's action became exceedingly irregular, and he appeared to be suffering from severe shock, from which he was roused with difficulty by means of alcoholic and diffusible stimulants. His intellect was clear.

On the 9th and 10th of April his condition was only tolerable, and he was troubled much by irregular cardiac action. On the evening of the 11th he went to sleep with a clear mind, but awoke about 9 o'clock violently delirious, and with uncontrollable jactitation, screaming continuously, and tossing and tearing the coverings from his bed. On the 12th he became more quiet, although still delirious, and recognizing no one. He continued in this condition for about thirty hours, becoming gradually more and more exhausted, and died early on the morning of the 13th of April. No post-mortem examination of the body was permitted. The death, in all probability, resulted from cerebral effusion or extravasation. The appearance of the stump, when opened after death, was in no respects abnormal.

CASE 5. Mr. T. E. B., on the 5th of June, 1867, fell under the wheel of a street car, receiving a compound fracture of both bones of the left leg, at the junction of the lower with the middle third. He was admitted into St. Joseph's Hospital on the same day, and an attempt was made by

the surgeon on duty to save the limb. The leg was placed in a fracture-box, and the usual bran dressing was employed. In the course of a month bony union of the fracture to a certain degree took place, but the external wound did not entirely heal. Abscesses also formed in the leg, above the seat of fracture, and burrowed toward the knee, and the integuments assumed an unhealthy appearance. On the 7th and 8th of July, three severe hemorrhages occurred from the open wound; these were restrained by pressure. During the summer the patient's condition improved, the leg became somewhat stiffer, and although the external opening did not entirely heal, the man was regarded as convalescent.

On the 9th of November a very severe secondary hemorrhage took place from the external wound; this was arrested by pressure over the femoral artery. On the night of the same day, during the patient's sleep, the hemorrhage recurred to a fearful extent, saturating the bed. It was controlled by the tourniquet.

On the morning of November 10th, in consultation with the surgical staff of the hospital, I removed the limb at the knee-joint. I was led to choose that point of operation by the evidently impaired vitality of the integuments and the doubtful condition of the bone, but more especially by my desire to avoid subjecting the patient, in his then weakened and ensanguine state, to any shock which might possibly be avoided. The operative procedure employed was that already described in the preceding cases. Ligatures were applied upon the popliteal artery and vein, and upon one articular artery. The end of the popliteal nerve was excised.

This patient did well, and the ligature on the popliteal artery separated on the tenth day after the amputation. A slight slough formed upon the lower flap, which was followed by granulation. A small portion of articular cartilage remaining as a foreign body, kept up some little irritation, which retarded the cure. The stump is now becoming firm, is not painful upon pressure, and promises to be satisfactory.

CASE 6. At the battle of Fredericksburg, in December, 1862, I amputated at the knee-joint, for gunshot fracture, the leg of a soldier about thirty years of age. The process employed was the same as that already described. Although I did not see this man after the operation, I subsequently learned that he did well, and recovered with a good stump.

CASE 7.—During General Grant's Wilderness campaign, I amputated at a hospital in Fredericksburg, the leg of a young soldier at the knee-joint. The injury was a gunshot wound of the upper portion of the tibia, involving the articulation. The process was that already described. This man did well for three days. At the expiration of this time, orders were received to remove all patients from the temporary hospitals, and to vacate Fredericksburg. I was subsequently informed that as this soldier was being lifted into the ambulance for transportation to the boat, a sudden and uncontrollable hemorrhage occurred, which proved almost immediately fatal. Owing to the pressing exigencies of the occasion, opportunity was not afforded for an examination of the stump after death.

CASE 8.—Operations by Dr. D. Hayes Agnew. Bridget B., aged 30, of strumous diathesis, an inmate of the Philadelphia Hospital, had suffered from an affection of the right leg for a period of twenty-five years. The ankle was anchylosed, and the tibia was diseased for nearly its whole extent. There was great ulceration of the leg. In December, 1859, Dr.

Agnew amputated the limb at the knee-joint, making a long anterior integumentary flap, including the patella, and a short posterior skin flap. The semilunar cartilages were removed.

Union by first intention to a great extent took place, and the patient recovered at the expiration of five weeks, with an excellent stump, possessing great motion. She has since worn an artificial limb without the slightest inconvenience.

CASE 9.—P. W., a German, aged 50, a patient, an inmate of the Philadelphia Hospital, had suffered for six years from a chronic ulcer of nearly the entire circumference of the lower half of the leg, with extensive necrosis of the tibia. In October, 1864, Dr. Agnew amputated the limb at the knee-joint, by the same operation as in the last case. The patient recovered promptly.

CASE 10.—A German, of middle age, had been run over by a street car, which terribly mutilated one leg, and produced also severe internal injuries. Reaction was slow and never very well established. Amputation at the knee-joint was performed by Dr. Agnew at the Philadelphia Hospital several hours after the occurrence of the accident in the same manner as in the preceding case. The patient died within twenty-four hours; more from his bodily injuries than as a result of the operation.

CASE 11.—An Irishman, aged 27, of great physical development, was brought into the Pennsylvania Hospital, in 1866, with a compound comminuted fracture of the bones of the leg, as high as the tubercle of the tibia. The injury was caused by the wheel of a street railroad car. The leg was amputated primarily, by Dr. D. H. Agnew, at the knee-joint in the same manner as in the preceding cases. The recovery in this instance was tedious, not caused by any misbehaviour on the part of the stump, but from abscesses which formed in the thigh; the result, in Dr. Agnew's opinion, of contusions received at the time of the accident. This patient was discharged from the hospital cured in about twelve weeks with a serviceable stump upon which he has since worn an artificial limb.

CASE 12.—Operation by Dr. Edward Peace. E. McH., aged 15, was admitted into the Pennsylvania Hospital for a deformed and ulcerated leg, the result of a railroad injury received six years previously. On Sept. 17th, 1844, Dr. Peace amputated the leg at the knee-joint by antero-posterior flaps. The patella and condyles were not disturbed. The wound was long in healing, but the boy recovered and was discharged from hospital, March 1st, 1845. [MSS. information received from Dr. George W. Norris.]

CASE 13.—Operations by Dr. A. Hewson. A young man, aged 26, was admitted into the Pennsylvania Hospital, in 1862, with a compound comminuted fracture of the leg produced by a railroad car. Primary amputation at the knee-joint was performed. The procedure employed was that by antero-posterior flaps. The articular surfaces of the condyles were sawn off, as also was that of the patella. The latter bone was then brought down upon the sawn face of the femur, as in Gritti's operation. This patient recovered with a good stump.

CASE 14.—A man, aged 37, was taken to the Pennsylvania Hospital, in 1862, with a leg crushed from a railroad accident. The limb was removed by Dr. A. Hewson at the knee-joint by a primary amputation performed in the same manner as in the preceding case. The man recovered with a satisfactory stump.

CASE 15.—L. N., aged 23, was admitted into the Pennsylvania Hos-

pital, in 1863, for a railroad injury of the bones of the leg. Primary amputation of the limb at the knee-joint was performed by Dr. A. Hewson, the same procedure as that already described. Two acupressure needles were used to arrest the hemorrhage. This patient died from pyæmia about three weeks after the amputation.

CASE 16.—Miss G., aged 22, suffered from a large enchondromatous tumour of the leg. In April, 1863, the limb was amputated by Dr. A. Hewson, at the knee-joint, by the process described in the preceding cases. The patient recovered rapidly, with an admirable stump. She has worn an artificial limb ever since.

CASE 17.—E. S., received a compound comminuted fracture of the foot from a railroad accident on the 19th of March, 1866. The laceration of the skin extended as far up as the knee. Primary amputation was performed by Dr. A. Hewson at the knee-joint, as already described. One acupressure pin was employed. The patient did well, although a troublesome ulcer remained on the stump which delayed his discharge from the house until the 5th of November, two hundred and thirty-one days after his admission.

CASE 18.—Operations by Dr. F. F. Maury. S. C., aged 14, was admitted into the Philadelphia Hospital in the spring of 1867. She had a spina-bifida from birth. The tumour, at the date of admission, was the size of a large cocoanut. She had also lateral curvature of the spine. Until she reached the age of twelve years her general health was good; she suffered no inconvenience from the spinal tumour, except that she could not sleep on her back. Talipes valgus of the left foot developed itself during her twelfth year. More than a year before her admission she trod upon a piece of glass with her right foot. Inflammation ensued, followed by ulceration and sloughing, which extended to the tarsal bones, opening the joint, involving the bones as well as the soft parts, and subsequently almost separating the foot from the leg.

On the 11th of September the leg was amputated at the knee-joint, by antero-posterior integumental flaps. The patella was retained, and also the condyles of the femur with their cartilages. Very little blood was lost during the operation. The child did well for four days, but on the 15th, symptoms of trismus became apparent, followed on the 16th by general spasms, and on the 17th by complete opisthotonos. She died at 3.30 A.M. on the 18th. The treatment in this case consisted in the hypodermic use of sulphate of morphia, and of the fluid extract of the calabar bean.

CASE 19.—In March, 1864, a coloured man, aged about 35, was admitted into the Philadelphia Hospital with gangrene of the leg, the result of exposure to cold. Amputation at the knee-joint by a long-anterior, and short-posterior integumental flap, was performed by Dr. F. F. Maury. The patella was left, and the articular surfaces of the condyles of the femur were shaved off. The vessels were found to be filled with fibrinous clots; there was little or no hemorrhage, and no ligatures were applied, not even to the popliteal artery. The angles of the wound subsequently sloughed, so as to expose the condyles of the femur. These were sawn off, and granulation of the whole surface resulted. This man made a satisfactory, though somewhat tardy cure. He was discharged from the hospital well, with a good stump, and afterwards walked with a peg leg.

CASE 20.—Operation by Drs. Lilly and Coleman, of New Jersey. H. K., between 25 and 30 years of age, an engineer on the Belvidere and Delaware Railroad, had his leg crushed to the knee, in a railroad collision

on the 6th of July, 1858. The following account of this case has been furnished the writer by Dr. Lilly:—

"Upon examination we found that the tibia and fibula were so crushed and comminuted that an amputation below the knee was impossible. The option was presented of cutting through the knee-joint, or of amputation through the femur. Upon consultation we decided on the former, there being sufficient integument uninjured on the posterior surface of the leg for a good flap. The tendon of the patella was divided about an inch below that bone; the joint was severed by a few strokes of the catlin, and the flap was formed by a single cut with that instrument. The synovial membranes, and the cartilages covering the condyles of the femur, were freely scarified with a scalpel, and to that we attributed the absence of synovial fluid during the healing process, which was accomplished in about six weeks without any untoward symptom.

"The stump, which was fitted with an artificial limb by Mr. Palmer, of Philadelphia, is a most serviceable one—much better, I think, than could have been obtained from an amputation of the thigh. K——, since the accident, has led an active life, walking without the use of a cane or crutch, and is now, and has been for some years, running an engine in the employ of the railroad company."

CASE 21.—Operations by Dr. T. G. Morton. A. H., aged twelve years, of strumous parentage, was admitted into the Pennsylvania Hospital June 3, 1864, for long-standing scrofulous disease involving the ankle-joint, and with caries of the tibia in its entire extent. Amputation at the knee-joint was performed June 11, by a long anterior and short posterior flap. The condyles of the femur were ulcerated, and their extremities were therefore removed; six ligatures were applied, and the wound was closed with lead sutures. The patient's health improved rapidly, and the stump was well in twenty-four days. She was discharged cured July 11, 1864, with a good stump.

CASE 22.—W. N., aged 30, Co. N, Pennsylvania Volunteers, was admitted into Satterlee Hospital June 10, 1863. He had received a compound comminuted fracture of the right leg, from a conoidal ball at White Oak Swamps, Va., June 29, 1862. Amputation was performed the same day on the field, but the flaps sloughed, and afterwards excessive hyperostosis of the extremities of the bones occurred with ulceration. (See p. 47, Circ. No. 6, and Catalogue A. M. M., Spec. 2778, p. 53 S. G. O.) Reamputation at the knee-joint was performed by Dr. Morton by long anterior and short posterior flaps, August 27, 1863. The patella and condyles were not disturbed. This patient made a good recovery, with a useful stump. Discharged March 3, 1864. December 24 the stump was good, and had caused no trouble since the operation. The extremities of the condyles were somewhat absorbed, and the end of the stump was flattened. The integument was quite movable, and the patella was drawn up about an inch and a half, and occupied a central position. He has worn an artificial limb ever since.

CASE 23.—A soldier, aged 46, was treated in the Satterlee Military Hospital for extensive necrosis of the bones of the right leg, and loss of the integuments, the result of a shell wound. In this case amputation was performed by Dr. T. G. Morton at the knee-joint by antero-posterior integumental flaps, retaining the patella and condyles of the femur. The cure, although protracted, was satisfactory.

CASE 24.—J. M., a labourer, was brought to the Pennsylvania Hospital June 11, 1864, having been run over on the Pennsylvania Railroad. Both legs were crushed below the knee. The man was very much intoxicated, and his condition did not warrant immediate operation. On

the morning of June 12 the right leg was amputated by Dr. T. G. Morton at the knee-joint by long anterior and short posterior integumental flaps, leaving the patella and condyles intact. The left leg was at the same time amputated four inches below the knee-joint. But very little blood was lost in these operations; the patient reacted, but died at ten o'clock on the same night.

CASE 25.—J. M., aged 31, on the 15th of December, 1864, was admitted into the Pennsylvania Hospital with a compound comminuted fracture of the right leg, from a railroad accident. Amputation of the leg in continuity was performed by Dr. T. G. Morton, ten hours after the injury. Extensive sloughing, with burrowing abscesses and necrosis of the bones of the stump ensued. Four weeks afterwards the head of the tibia became necrosed. In April, 1865, re-amputation of the limb at the knee-joint was performed by antero-posterior integumental flaps. The patella was saved, but the extremities of the condyles of the femur were sawn off. This patient did well, and was discharged cured on the 20th of June. He has since been employed as an attendant at the Pennsylvania Hospital for the Insane, and for the last two years has not lost a moment from work on account of the stump, which is well rounded, with loose integuments. He is able to rest a great portion of his weight upon the stump.

CASE 26.—J. R., a negro, aged 37, received on the railroad, Dec. 12th, 1865, a compound comminuted fracture of the right tibia and fibula, which extended up into the joint. Amputation at the knee-joint was performed, by Dr. T. G. Morton, according to his usual antero-posterior flap method. The patella was saved, and the extremities of the condyles sawn off. Three vessels required ligation. The case did well until December 12th, when the patient had a violent chill, which was followed by great prostration. The chills recurred at intervals, and death took place on December 21st, 1865.

Autopsy.—Numerous secondary deposits were found in the lungs—pleuritis also existed. No deposits were found in the abdominal viscera. The lymphatic glands of the right thigh were enlarged and suppurating; the right femoral vein contained an ante-mortem, and partially decomposed coagulum.

CASE 27.—J. K., aged 56, a woman of feeble health, received a compound fracture of both bones of the left leg, at the junction of its middle and lower thirds by a fall from a height of two feet. Amputation was advised, but was not consented to by the patient, on the day of the accident, October 18th, 1867. Extensive necrosis, and deeply dissecting abscesses then formed in the leg. Amputation at the knee-joint was performed by Dr. T. G. Morton, December 1st, 1867, by lateral integumental flaps. The patella and condyles were left undisturbed. Four ligatures were applied. About the 5th day after the operation an abscess formed upon the inside of the thigh, which was opened. On the 11th day the last ligature separated. A portion of the flap covering the external condyle sloughed, but the granulations from the bone sprang up rapidly, and by the expiration of the 30th day the surface of the stump was healed. The patient is perfectly recovered, and will have a useful stump.

CASE 28.—Operation by Dr. Wm. Hunt. M. L., aged 20, was admitted into the Pennsylvania Hospital September 12th, 1864. He had some months previously met with a railroad accident, for which his leg had been amputated in continuity. He now entered the hospital on account of an ulcer which existed upon his stump. Dr. Morton endeavoured by a species

of plastic operation to remedy this trouble, but retraction of the tissues occurred, and Dr. Hunt was subsequently obliged to reamputate the limb. The operation was performed at the knee-joint, the articular surfaces of the condyles and patella were sawn off, and the patella was then turned down upon the sawn end of the femur, to which it formed a firm union. The patient was discharged from the hospital on the 17th of February, 1865, 158 days after the last operation. He wore an artificial limb with ease, and has since returned to Ireland.

CASE 29.—Operations by Dr. Kenderdine. B. W., aged 37, female, was received in the Pennsylvania Hospital May 19th, 1864, for scrofulous caries of the left ankle and foot. Eight months previously her right leg had been amputated at the knee-joint, by Dr. Kenderdine. The patella had been saved, and the extremities of the condyles had been taken away. The stump was an excellent one in every respect. Its extremity was very flat, and the integuments were movable over it.

CASE 30.—In 1862 Dr. K. at the Philadelphia Hospital, amputated at the knee-joint the leg of a middle-aged man, for necrosis of the tibia and fibula. The patella, and the condyles of the femur were taken away; the flaps were integumental, and were formed from the anterior and posterior surfaces of the limb. At the time of operation, this man was in a very poor condition. He died at the expiration of twelve days, from pyæmia.

CASE 31.—Operation by Dr. Edward Shippen (late surgeon U. S. Vols.). On February 18th, 1865, Corp. E. P. R., Co. G., 107th Ills. Vols., was wounded before Fort Anderson, on the Cape Fear River, a few days before the capture of Wilmington, N. C. Both bones of his left leg were shattered by a shell, and at the same time the muscles of the calf were horribly mutilated. Four or five hours after the reception of the wound, surgeon Shippen amputated the leg at the knee-joint, by Bauden's operation, leaving the patella and condyles undisturbed. The patient was under the influence of chloroform. After the operation he did well for some days, and was sent North on the hospital steamship Spaulding, on the 28th of February. Dr. S. has since been informed that this soldier died of pyæmia at the Jarvis Hospital, Baltimore, on the 22d of April, more than two months after the operation was performed.

CASE 32.—Operation by Dr. Erskine Mason, of New York. In December, 1867, the writer examined the stump of J. M., whose leg had been amputated at the knee-joint. This man stated that in February, 1864 he had been wounded at the battle of Olustee, Florida, by a musket-ball, which lodged in the substance of the patella, and was removed on the following day. He remained a prisoner at Tullahoma for three months, and at Andersonville for six months, and was exchanged at Savannah in November of the same year. He was afterwards treated at the Chestnut Hill Hospital, Philadelphia, and was discharged from service in the early part of 1865. On the 28th of May, 1865, his leg was amputated at the Blackwell's Island Hospital. Dr. Mason, the operator, in a letter to the writer, states that at that time the joint was painful, enlarged, and partially anchylosed. The leg was atrophied, its temperature low, and there was great venous congestion. The operation was performed by antero-posterior flaps, the heads of the gastrocnemius being included in the posterior flap. The condyles of the femur were found to be eroded, and about one inch of their extremities was sawn off. On the evening of the day of operation there was some secondary hemorrhage, which was checked

by the application of ice. The flaps, however, healed almost by first intention.

The patient was confined to his bed forty-eight days, and was discharged from the hospital cured, at the expiration of about sixty days.

When examined by the writer, the patella was found to be firmly adherent to the anterior surface of the femur, and the condyles were flattened; the stump was a model one in every respect. There was no pain or tenderness; the patient was able to bear his whole weight on the end of the stump, to move about freely and to jump with his artificial limb, which was a home-made peg. This he had worn since July 17, 1865.

CASE 33.—C. S. P., a soldier, 12th New York Volunteers, was wounded in the leg June 3d, 1864, at the battle of Cold Harbor, Va. He lay on the battle-field all day, and on the following morning his leg was amputated at the knee-joint. The flaps were integumental, and were obtained from the front and back of the limb. The patella was left; the articular surfaces of the condyles were removed. This soldier recovered rapidly, and at the expiration of nine months from the time of operation could walk freely with an artificial limb. He can now bear his full weight upon the end of his stump. The movements of rotation of the thigh are very perfect.

CASE 34.—Amputation at the knee-joint was performed by a distinguished surgeon upon a young adult patient. The condyles and patella were not removed. The patient recovered; an artificial limb of the most approved pattern was fitted to the stump, and the patient's daily avocations were resumed. These were arduous in nature, and demanded constant locomotion; as a result, excoriation of one or two points upon the surface of the stump took place; the patient became dissatisfied with the stump, and a reamputation in the continuity of the thigh was subsequently performed by another practitioner.

The mechanician who adjusted the artificial limb used before reamputation, stated to the writer that when he examined the stump, the excoriation was small, superficial and apparently of little importance. It had been caused by excessive walking. The adjustment of this limb, he stated, could easily have been arranged so as to have taken away all pressure from the end of the stump. The interval between the two operations was several years.

CASE 35.—Operation by Surgeon E. Bentley, U. S. Volunteers. E. L. P., æt. 21, received a shell wound of the leg at the battle of Cedar Mountain, Va., August 9, 1862. Primary amputation at the knee-joint was performed by the surgeon above named. The articular surfaces of the condyles were sawn off, and the patella was left; the stump healed rapidly and the patient recovered without accident in four months. He has since been in four battles, and on one occasion was captured and was obliged to walk fifty-four miles between sunrise and 9 o'clock P. M. The stump is painless, and the patient has informed the writer that he can walk, dance, mount his horse and ride with perfect facility. He attributes much of the usefulness of his limb to the presence of the patella. The writer has had frequent opportunities of examining this stump, and of seeing Captain P. walk and ride; the stump is in every respect excellent, and one of the very best he has ever seen.

CASE 36.—Operation by Doctor Pancoast. On the 27th of June, 1863, J. P. H., a boy aged 8, was admitted in the Pennsylvania Hospital with a crushed fracture of the leg, the result of a railroad accident. Immediate

amputation was performed at the knee-joint by Dr. P., who sawed off the condyles, leaving the patella, and making long anterior and short posterior skin flaps. The child did well until the fourteenth day after the operation, when he had a marked chill; the flaps sloughed, and the patella which had been left upon the sawn end of the femur retracted, and the end of the femur was left uncovered; he grew worse and died of pyæmia thirty-two days after admission. At the post-mortem examination metastatic abscesses were found in the lungs, liver, and spleen.

CASE 37.—Amputation at knee-joint by Dr. Stephen Smith. Margaret B., aged 65, Irish, admitted to Bellevue Hospital November 21, 1866. She stated that a short time since, while crossing a street, she was knocked down and run over by a loaded truck. On examination the tibia and fibula were found to be fractured about three inches above the ankle-joint; the tibia was much comminuted, and communicated externally by a small opening. The soft parts were greatly contused. Dr. Smith proceeded to amputate the leg at the junction of the upper and middle thirds, but finding the tissues in very bad condition, he extended his incisions, removing the limb at the knee-joint by internal flaps. The patella and condyles were left. The patient did well, a small portion of the flap sloughed over the posterior portion of the external condyle, but the surface soon granulated. By the third of January, 1867, the wound was healed with the exception of one small ulcer. By the 1st of April the wound was completely healed. Dr. Smith now writes (January, 1868), that the cicatrix lies behind the stump, between the condyles, and does not rest upon any portion of the face of the stump, or over the condyles. The stump is an excellent one, and bears pressure well.

CASE 38.—In 1860 Dr. S. D. Gross amputated, at the knee-joint, the leg of a woman aged 45, for compound fracture of the bones of the leg. The operation was immediate. The flaps were anterior and posterior, and were formed from the integuments. The patient recovered with an excellent stump.

CASE 39.—The same surgeon, in the year 1862, for gangrene following a complicated fracture of the leg, successfully removed at the knee-joint the limb of a woman aged 55. The flaps were formed in the same manner as in the preceding case. The articular surfaces of the condyles were shaved off and the patella was left. The resulting stump was serviceable and satisfactory.

CASE 40.—In 1863, Dr. John K. Kane, of Wilmington, Delaware, at the Chester Hospital, amputated at the knee-joint the leg of S. L., æt. 18, a soldier who had received a gunshot fracture of the tibia and fibula several months previously. The flaps, which were integumentary, were obtained from the front and back of the limb; the patella and condyles were left. The patient died six days subsequent to the operation from pyæmia.

CASE 41.—H. C. P., æt. 30, Co. B, 12th N. Y. Vols., on the 27th of June, 1862, received a gunshot fracture of the right tibia. The ball was not extracted, but remained resting against the posterior surface of the tibia. Extensive necrosis of the tibia, with sloughing of the soft tissues, resulted. The patient was sent to Chester Hospital, and on March 14, 1863, Dr. Draper, of Wilmington, Delaware, disarticulated the leg at the knee-joint, by the long anterior flap method. The patella and condyles were left undisturbed. The cure was effected rapidly, and the resulting stump was good.

CASE 42.—W. H., æt. 28, Co. B, 14th Tenn. Inf., C. S. A. Admitted into Chester Hospital July 17, 1863. He had been wounded on July 3, by a ball which fractured the tibia just below the tuberosity. Extensive sloughing had occurred, which opened the posterior tibial artery, causing profuse hemorrhage. On the 23d of July the limb was amputated at the knee-joint by Dr. Draper, by a procedure similar in every respect to that employed in the preceding case. The patient died of exhaustion on the twenty-first day after the operation.

CASE 43.—W. W., æt. 22, Co. D, 52d N. C. Inf., C. S. A. Admitted into Chester Hospital July 14, 1863. This man, on the 3d of July, 1863, had received a gunshot fracture of the left tibia, the ball perforating the bone from before backward. He had also received a gunshot fracture of the metatarsal bones of the left foot. Sloughing ensued, with great burrowing of pus in the calf of the leg. On August 4, 1863, Dr. Draper amputated the leg at the knee-joint by the process employed in the two preceding cases. The patient made a good recovery, with a sound and useful stump.

CASE 44.—At the battle of Fredericksburg, Dec. 13, 1862, Assist. Surg. C. C. Lee, U. S. A., amputated at the knee-joint the limb of a soldier who had received a gunshot wound in the upper part of the leg a few hours previously. The flaps were integumental, and were taken from the front and back of the joint. The condyles and patella were left. The patient recovered.

CASE 45.—The same surgeon, at the Douglas Hospital in Washington, disarticulated at the knee-joint the leg of a soldier about 35 years of age, who, some days previously, had received a gunshot fracture of the head of the tibia, the fracture extending into the joint. The patella was left, and the tips of the condyles were sawn off. This patient died about three days after the operation, from general exhaustion and with slight symptoms of pyæmia.

The following American cases of amputation at the knee-joint have already been reported. Only their outlines are therefore submitted, with the references.

CASE 46.—Dr. Nathan Smith, of Connecticut, in April, 1824, amputated at the knee-joint the leg of Miss R. D., of Brunswick, Me., for long-standing disease of the bones and soft parts of the leg. Operative process—Anterior skin flap, leaving patella; and posterior flap of gastrocnemius. The patient recovered.—*Am. Med. Review*, vol. ii. p. 370.

CASE 47.—M. Blaquiere, in 1833, amputated at the knee-joint the leg of a Mexican Indian, æt. 25, for gangrene produced by the application of hot bricks during the cold stage of Asiatic cholera. Velpeau's operation. Recovery.—Mott's Velpeau, 1856, p. 243, from *Journ. des Connaiss.*, Paris, Août, 1844, p. 60.

CASE 48.—Dr. Catley, of Delaware, reports the case of S. S., æt. 33, whose leg was amputated at the knee-joint, in 1835, by a practitioner (not named), for gangrene, the result of a tight bandage applied just above the knee for laceration of popliteal artery. Reamputation of thigh thirteen years afterwards. Recovery.—*Ohio Med. and Surg. Journal*, vol. i. p. 126.

CASE 49.—Dr. Markoe, in the *N. Y. Journal of Medicine* for January, 1856, states that in 1841 he examined at the New York Hospital an excellent stump of the knee-joint amputation.

CASE 50.—In 1841, Dr. Pancoast, at the Philadelphia Hospital, removed at the knee-joint the leg of R. M., æt. 35, for necrosis of entire shaft of tibia. Operation by three integumental flaps, the patella and condyles of femur being left. Recovery.—Pancoast's *Operative Surgery*, 1846, p. 169.

CASE 51.—Dr. Stephen Smith, in the *N. Y. Journal of Medicine* for November, 1852, p. 318, reports the case of a saddler whose leg had been disarticulated at the knee with a razor, for gunshot injury of the leg. This patient presented himself at the clinic of the College of Physicians and Surgeons.

CASE 52.—The same surgeon in the same article reports the case of a coloured man upon whom amputation at the knee-joint was practised by Dr. Sabine, some years prior to report, for gangrene of the leg, following ligation of the femoral artery. Recovery.

CASE 53.—In the *N. Y. Journal of Medicine* for January, 1856, Dr. Markoe reports the case of E. C., æt. 35. Amputation at knee-joint, by circular method, by Dr. J. Kearney Rodgers, Feb. 9, 1846, at the New York Hospital, for severe burns. The patella was not removed. Died March 7, 1846.

CASE 54.—In the same *Journal*, Dr. Markoe also reports the case of T. H., æt. 21, whose leg was amputated previously at the knee-joint, for a railroad accident, by Dr. J. K. Rodgers, of the New York Hospital, Oct. 19, 1849. Antero-posterior skin flaps. This patient died Oct. 22, 1849.

CASE 55.—In the same paper, Dr. Markoe alludes to the case of D. B., æt. 36, whose leg was amputated at the knee-joint, at the New York Hospital, Jan. 21, 1849. Cause, syphilitic disease of the bones of the leg, followed by gangrene. Death Jan. 29, 1849.

CASE 56.—On the 7th of April, 1852, Dr. Parker, of New York, amputated at the knee-joint the leg of J. McN., æt. 25, for paralysis and atrophy of right leg, following an attack of scarlet fever at four years of age. Anterior integumental and posterior muscular flaps. Secondary hemorrhage on fifth, sixth, eleventh, twelfth, thirteenth, and twentieth days. Ligation of femoral artery on thirteenth day, and reamputation in continuity of femur on twentieth day. Recovery.—*N. Y. Journal of Medicine*, Nov. 1852.

CASE 57.—On the 30th of April, 1852, Dr. Buck, at the New York Hospital, removed at the knee-joint the leg of J. McA., æt. 13, which had been crushed a few hours before by two bars of railroad iron which fell upon it. Anterior and posterior flaps, and ends of condyles sawn off. Recovered.—*N. Y. Journal of Medicine*, Nov. 1852, and Jan. 1856.

CASE 58.—M. R., æt. 50. Amputation at knee-joint, by Dr. Buck, at the New York Hospital, for railroad crush of leg, Feb. 18, 1852. Small anterior and large posterior flap; patella left. Recovered with a good stump.—*N. Y. Journ. of Medicine*, Nov. 1852, and Jan. 1856.

CASE 59.—Dr. I. Moses reported to the New York Pathological Society the case of J. S., æt. 26, a Mexican, whose leg he amputated at the knee-joint, Nov. 22, 1854, for gunshot wound of leg, received five months previously. Short anterior skin flap, and long posterior muscular flap (Hoin's method). Condyles and patella left. Recovery with good stump.—*N. Y. Journ. of Med.*, Jan. 1856.

CASE 60.—A. M. H., aged two years and three months. Railroad crush of right leg, and laceration of soft parts of left leg. Right leg amputated by Dr. Markoe, May 18, 1855, five hours after injury. Long anterior and short posterior flaps, patella and condyles left. Recovery.—*N. Y. Journ. of Med.*, Jan. 1856.

CASE 61.—Dr. Halsted, on Aug. 7, 1855, at the N. Y. Hospital, amputated at the knee-joint the leg of A. B., æt. 34, for railroad compound fracture of right leg (also comminuted fracture of left arm). Long anterior and small posterior flap. Died on Aug. 11.—*N. Y. Journal of Medicine*, Jan. 1856. Had for some days previous suffered from delirium tremens. Died apparently worn out by constant convulsive movements.

CASE 62.—In the *N. Y. Journal of Med.*, Nov. 1856, Dr. Markoe reports the case of C. S., æt. 22, whose leg he amputated for chronic inflammation of the knee-joint, Nov. 3, 1855. Long anterior and short posterior flaps; patella removed, and surfaces of condyles sawn off. Recovered with a good sound stump.

CASE 63.—Dr. Markoe, at the N. Y. Hospital, on the 6th of Nov. 1855, removed, at the knee-joint, the leg of a brakesman on the Erie Railroad, æt. 22, which had been crushed between the driving wheel and side of an engine. Long anterior, and short posterior flaps. Patella and condyles left. The patient recovered.

CASE 64.—On Sept. 8, 1852, the leg of John K., æt. 39, which had been

crushed by a log of mahogany, was amputated, at the N. Y. Hospital, at the knee-joint, by flaps. Condyles trimmed. This patient died forty-eight hours after the operation. The case was under the care of Dr. Watson.

In the *Richmond Medical Reporter*, vol. iii., No. 1, p. 55, will be found, in Dr. F. Sorel's statistics, a mention of eleven cases of knee-joint amputation, which were performed by southern surgeons. Five were primary, of which 3 died; and 6 were secondary, all of which died.

The following cases of amputations at the knee, and at the knee-joint, have been recorded in the British medical journals:—

CASE 65.—Mr. Syme reports, in the *Lond. and Ed. Monthly Journ. of Med.* for May, 1845, p. 337, the case of P. P., æt. 21, who suffered from abscess of the knee-joint. On March 2, 1844, Mr. Syme amputated the leg at the knee, making a long posterior flap from the calf, removing the patella, and sawing off the condyles. The patient recovered, and was discharged well on the 31st of May.

CASE 66.—In the same paper Mr. Syme reports the case of Jane M., æt. 22, whose leg he also successfully amputated at the knee for disease of the joint. The operation was similar to the previously described case, except that the anterior skin flap was made on the lower, instead of the upper margin of the patella.—*Am. Journ. of Med. Sci.*, July, 1845, p. 210.

CASES 67, 68.—In the *Lancet* for July 19, 1845, p. 79, and in the *Med. Times and Gaz.*, July 8, 1854, Sir Wm. Fergusson reports two cases of knee amputation for disease of the knee-joint. One of the patients was a man of 24 years of age; the other a boy aged 11. Both patients recovered with excellent stumps. The operation performed by this surgeon was by cutting a short anterior skin-flap, and a long posterior flap from the belly of the gastrocnemius, then sawing off the condyles, and removing the patella.—See *Am. Journ. of Med. Sci.*, Oct. 1854, p. 542.

CASE 69.—Dr. George W. Williamson, Assist. Surg. to the Forces, reports the case of Wm. L., æt. 18, whose leg he removed at the knee-joint for abscess, by Fergusson's process, on Dec. 31, 1845. The stump did not heal, the margin of the femur necrosed, and was sawn off, and the patient died April 3, 1846.

CASE 70.—In the *British Med. Journ.*, April 16, 1864, Mr. Carden reports one case, that of Wm. J., æt. 24, whose leg he disarticulated at the knee, Aug. 19, 1847, for abscess of the knee following fracture of the patella. From the account of this case, the condyles of the femur appear to have been left.

CASE 71.—One case of true amputation at the knee-joint, performed at the Glasgow Infirmary, with a fatal result, is recorded by Mr. Samuel Fenwick, in his Statistics of Operations Performed at Newcastle-upon-Tyne Infirmary, published in the *Monthly Journ. of Med. Sci.*, Oct. 1847, p. 248.

CASE 72.—G. M. Jones, Esq., Surgeon to the Jersey Hospital, records, in the *Med. Times and Gaz.*, the case of John S., æt. 35, whose leg he amputated at the knee-joint, for compound fracture of both bones, Nov. 10, 1853. This man recovered with a perfect stump. The operation consisted in a short anterior, and short posterior flap, the removal of the patella, and the articular end of the femur.

CASE 73.—In the *Lancet*, May 27, 1854, Mr. H. G. Potter, of Newcastle, reports the case of Harriet S., æt. 40, whose leg he removed at the knee-joint, by Fergusson's operation, Dec. 13, 1853, for abscess of the joint. The patient was discharged from hospital cured, March 17, 1854.

CASE 74.—Sir Wm. Fergusson reports, in the *Lancet* for Feb. 28, 1857, p. 215, having performed his amputation at the knee successfully on a young lad, Dec. 6, 1856, for necrosis of the tibia and abscess of the knee-joint.

CASES 75, 76, 77.—Mr. Lane, Surgeon to St. Mary's Hospital, London, in the *Lancet* for 1857, vol. ii. p. 324, and p. 474, reports the case of a boy 8 years of age, upon whom he performed disarticulation at the knee-joint on the 16th of Sept., for disease of the tibia involving the joint. The patient recovered. The operation practised by Mr. Lane consisted in the formation of a long anterior, and of a short posterior integumental flap. The patella and condyles were left

undisturbed, and the incrusting cartilages were not touched. In the comments of the British medical press upon this case, it is stated that this operation of Mr. Lane's was the first one of the kind performed in England, although it had been previously performed at Glasgow, in the instance reported by Mr. Fenwick. In the *Lancet* for April 30, 1859, p. 440, Mr. Lane also reports two other cases of the same amputation, one was on the person of a man aged 38, and was performed April 6, 1859, for an epithelial cancer of the leg. The particulars of the other case are not stated. Both occurred at St. Mary's Hospital, in the service of Mr. Lane, and both recovered.

CASE 78.—Sir Wm. Fergusson, in the *Lancet* for April 24, 1858, narrates the case of George H., æt. 20, whose leg he amputated at the knee-joint for a tumour on the right tibia. The operation in this instance was by a long anterior, and short posterior skin flap. The condyles were left, but the patella was removed. The patient recovered.

CASE 79.—The same surgeon reports, in the *Lancet* for Dec. 10, 1859, an amputation at the knee-joint, on a man æt. 48, for medullary cancer of the fibula. The operation was done by anterior and posterior skin flaps. The condyles were left, and the patella was removed. The patient did well at first, but the wound subsequently fell into a sloughy condition, and the man died.

CASE 80.—Mr. Holthouse, at the Westminster Hospital, on Dec. 24, 1858, disarticulated at the knee the leg of H. H., a drayman, æt. 60, for a compound comminuted fracture of the bones of the leg, received ten days previously. Long anterior and short posterior flaps. Patella and condyles left. The patient had suffered from constant oozing of blood from the time of the accident up to date of operation, at which time he was in poor condition. He died from exhaustion.—*Lancet*, April 16, 1859.

CASE 81.—In the *Lancet* for Dec. 10, 1859, is reported a case of Mr. Coulson's, at St. Mary's Hospital, in which amputation was performed at the knee-joint, by Lane's method, for an encephaloid tumour of the right leg, chiefly attached to the tibia. The patient, S. E., a single woman, aged 18, recovered in forty-four days after the operation. Twelve months afterwards she had a good sound stump.

CASE 82.—Mr. Butcher, in his *Conservative Surgery*, p. 457, reports the case of Thomas K., æt. 45, whose leg, Feb. 25, 1860, he amputated at the knee for fracture following disease of the bone. The operation was performed by an anterior integumental and by a posterior long muscular flap. The condyles were sawn with Butcher's saw. The patient recovered with a satisfactory stump.

CASE 83.—In the *British Med. Journ.* for June 15, 1861, Mr. Dolman reports the case of John M., æt. 26, both of whose legs were crushed by a railroad accident. On April 11, 1860, a few hours after the accident, Mr. Fearn amputated the left leg just below the knee. The patient was allowed to recover from the shock, and the right leg was then amputated at the knee-joint by antero-posterior skin flaps. The patella and condyles were left, four ligatures were applied. On April 20 the left femoral artery was tied for secondary hemorrhage. The patient recovered, and, the report states, went up to London for artificial limbs.

CASE 84.—On November 17, 1864, Mr. Pollock amputated at the knee-joint the leg of James H., a wood-sawyer, æt. 51, for ulcer of the leg. Long anterior and short posterior flaps. The condyles and patella were left. This patient recovered with a good stump.—*British Med. Journ.*, 1865, p. 266, and *Lancet*, Jan. 13, 1866.

CASE 85.—In the last-named journal, the case of M. G., a female, æt. 55, half idiotic, is reported as having been operated upon by Mr. Pollock in a similar manner, Aug. 3, 1865, for an extensive ulcer of the left foot and lower half of left leg. She died Aug. 6. The report states that "when admitted into hospital she was in a very low state, and was evidently sinking from exhaustion."

CASE 86.—In the same journal is reported the case of J. S., æt. 12, whose leg was amputated at the knee-joint by Mr. T. Holmes, at St. George's Hospital, Sept. 14, 1865, for abscess of knee-joint. Operation by short anterior and long posterior flap, from muscles of calf. Patella removed, condyles left. Recovered.

CASES 87, 88.—In the *Edinburgh Med. Journ.* for April, 1866, p. 871, Mr. Syme reports the case of W. M., æt. 32, whose leg he amputated at the knee, by Carden's method, for compound fracture of the leg occurring on the railroad January 1. This patient recovered. Mr. Syme also reports a secondary amputation at the knee, by Carden's method, performed upon a boy æt. 6, whose foot he had previously amputated at the ankle, for a railroad injury. The child recovered.

CASE 89.—In the same journal Mr. Syme mentions a secondary amputation at the knee, by Carden's method, performed by Dr. Joseph Bell, Jan. 26, 1866, upon a man, both of whose legs had been fractured on the railroad. One leg was amputated at the knee, and the other was saved. This patient recovered.

CASES 90, 91.—On the 19th of Sept., 1865, Mr. Annandale amputated, at the knee, by Carden's process, both legs of a man, æt. 63, who had been injured by the fall of iron bars a few hours before. The patient recovered, a result unlooked for by the operator.

On Oct. 25, the same surgeon removed successfully, by the same method, the leg of a man for knee-joint disease.

CASE 92.—In the paper already quoted, Mr. Syme records the cases operated upon, secondarily, according to the same method, by Mr. Mackenzie, of Kelso, Oct. 23, 1865. The patient, a young farmer, who had received a compound fracture of the leg from a cart-shaft, made a good recovery with an excellent stump.

CASE 93.—On Feb. 4, 1865, Mr. Hislop, of N. Berwick, removed successfully, by the same process, for disease of the joint, the leg of a clergyman, who recovered with a comfortable stump.

CASE 94.—On Oct. 10, 1865, Mr. Cooper Foster, of Guy's Hospital, amputated, by the circular method at the knee-joint, the leg of a railway laborer, which had been lacerated by a hook attached to a capstan rope. The patella was removed, and the condyles were left. This patient recovered, and was discharged Nov. 18, 1865.—*Lancet*, Jan. 13, 1866.

In the course of his paper Mr. Syme also refers to five cases successfully operated upon, in a similar manner, by Prof. Lister, of Glasgow.

In concluding this summary of the reports of those British cases of knee and knee-joint amputations, which we have collected, it may be well also to append the statistics which have been furnished by Mr. Carden, in the paper already quoted, in the *British Medical Journal*, April 16, 1864. From 1846 to 1864, Mr. Carden performed 30 such amputations, with the following results:—

			Deaths.	Recoveries.
Accidents	Primary	4	1	3
"	Secondary	3	..	3
Advanced cancer . . .	"	6	3	3
Sloughing gangrene . . .	"	1	1	..
Disease	"	16	..	16
		30	5	25

We have subtracted from Mr. Carden's table the amputation at the joint proper, numbered 70 in the foregoing list.

In the following cases, occurring in France, Germany, and Russia, the details are sufficiently accurate for the purposes of our examination:—

CASE 95.—Recorded by Velpeau. On January 14, 1830, M. Velpeau disarticulated at the knee-joint the leg of a boy æt. 19, for necrosis of the tibia. The flap was formed from the integuments in front of the knee. The boy recovered, and wore a peg leg on which he could bear the weight of his body.

CASE 96.—A man, 29 years of age, received a compound fracture of the leg, which was followed by gangrene. On the 4th of June, 1830, M. Velpeau amputated the leg at the knee-joint by a circular operation. This man recovered with a good stump.

CASE 97.—In 1830 M. Velpeau examined the leg of a young man, aged 19, whose leg had been amputated seven years previously at the Hôpital des Enfans. He could walk perfectly well with an artificial limb.

CASE 98.—Baudens reports the case of a soldier wounded at Tafna, Jan. 26, 1836, whose leg he amputated by an anterior integumentary and posterior muscular flap. Portions of both condyles were removed. The wound healed well, making a satisfactory stump.

CASE 99.—The same surgeon also furnishes an account of an operation he performed on a young soldier, wounded April 1, 1836. The limb was removed by the circular method, and the stump proved to be a good one, admitting of the use of a wooden leg.

CASE 100.—M. Murville, of Lille, reports in the *Gazette Med. de Paris* for Nov. 31, 1845, the case of an infant 20 months of age, upon whom he performed amputation at the knee-joint for gangrene following a crush from a carriage-wheel. The case did well, and the stump proved to be an excellent one.

CASE 101.—The same surgeon also describes an operation performed by him upon a man aged 48, whose leg had become gangrenous from excessive inflammation following an injury to the ankle produced by a block of wood. The operation practised was by a short anterior, and long posterior muscular flap. The patella and condyles were left. At the end of sixty-two days the wound had cicatrized perfectly, and he afterwards used a wooden leg with great facility.

CASE 102.—In *Langenbeck's Archiv* for 1865, 7 Band, Zweiter heft, p. 489, is recorded the case of O. B., æt. 25, a Turk, who received a gunshot fracture of both bones of the leg, in July, 1854. The man underwent a long and exposed wagon-transportation, and the leg fell into bad condition. On January 30, 1855, Dr. J. Mazanowski disarticulated the limb at the knee-joint by Bauden's oval flap. Repeated attacks of secondary hemorrhage supervened, but the patient eventually recovered with an excellent useful stump.

CASE 103.—Operation by M. Maisonneuve. On March 1, 1854, this surgeon, at the Hôpital Cochin, disarticulated at the knee the leg of Augustine Ninot, æt. 22, for osteo-sarcoma of the leg. Twelve days afterwards the femoral artery was tied for secondary hemorrhage. The woman recovered, and was able to walk with agility on an artificial limb.—*Gaz. Méd. de Paris*, Sept. 2, 1854.

CASE 104.—Operation by Arlaud. (*Roux, De l'Ostéomyélite et des Amputations Secondaires, &c.*, p. 99. Paris, 1860.) S. D., a French soldier, æt. 23, was wounded at Solferino by a bullet, which fractured both bones of the leg. He was treated conservatively in Italy. Osseous union occurred, with excessive deposit of callus. On November 5, 1859, he was admitted into the Hospital of St. Mandrier. The leg presented fistulous openings, from which frequent exfoliations were removed. The patient was emaciated from excessive pain and continued suffering. As it was evident that the bone was affected, with extensive osteo-myelitis, the limb was amputated at the knee-joint by Bauden's oval operation December 19. On January 5 a large abscess formed in the thigh, which was opened. He then recovered rapidly, and was discharged from hospital February 25, perfectly cured, and furnished with a wooden leg, which permitted him to walk with facility.

CASES 105 to 114.—In the published statistics of the Surgical Clinic at Tubingen, from 1843 to 1863, p. 30, Stuttgart, 1863, Dr. Hermann Schmidt reports ten cases of amputation at the knee-joint. Of these, six recovered, and four died. Two of the deaths were from pyæmia. In both of these cases the condyles were removed. One death resulted from hemorrhage, and one from exhaustion. In two instances, the patella was excised. The indications for the amputation were, in four cases, caries or necrosis of the tibia; in four cases, ulcer of the leg; and in two cases, gangrene. The operation by the single anterior flap was performed seven times; the circular operation once; and the posterior muscular flap method once. The stumps of the cases which recovered seem to have been satisfactory. The reporter, however, prefers amputation in the con-

tinuity of the thigh to that of the knee, since the Tubingen statistics of the former operation present a less degree of mortality than the latter, which was forty per cent.

CASES 115 to 120.—In *Canstatt's Archiv* for 1857, p. 218, Dr. J. T. Heyfelder briefly refers to six cases in which he had performed amputation at the knee-joint. Two cases of this operation for compound fracture of the bones of the leg, died respectively about the tenth and twenty-fifth day, from pyæmia. Two other cases operated upon for caries of the leg bones also died from the same cause. One patient upon whom he had performed Hoin's posterior muscular flap operation died on the fourth day from pyæmia, probably caused, as the operator observes, by excessive suppuration from so large a muscular flap.

One other case, injured by an explosion, and operated upon by Bauden's method, recovered with a good stump, and at the end of five months was able to perform field work.

List of Cases of Disarticulation at the Knee, not included in the Tabulations of this Article.

	Recoveries.	Deaths.		Recoveries.	Deaths.
De la Roque, 1773	1		Langenbeck	1	1
J. L. Petit, 1773	2		Textor, the elder	4	2
Hoin, in Lyons, 1764	1		Beclard, 1823	1	
Gignoux, of Valence (spontaneous	1		Ph. von Walther	...	1
Sabatier (spontaneous)	1		Robert	1	
Richerand	1		Bruns, in Tubingen	2	1
Deziemeris	1		Munster, in Copenhagen	1	
Bourgeois, at Etampes	1		Schuh, in Vienna	...	1
Rossi	2		Textor, the younger	1	
Nivert	1		Zeis, in Marburg, 1830	1	
Laugier	...	2	Gunther, in Leipzig	...	1
Velpeau[1]	...	4	J. L. Petit, 1774	1	
Baudens[2]	1	2	Larrey, in the year 3	1	
Pichozel[2]	1		Coste, of Marseilles[5]	1	1
Jobert[2]	...	1	J. Heyfelder[6]	1	5
Thos. Volpi[2]	2	1	Vanzetti[6]	1	
Scrive, in Africa[2]	...	1	Uhde[7]	3	2
Gerdy[2]	...	1	Salleron, at Dohme-Bagatché, Constantinople for		
Guyon[2]	...	1	gunshot injuries[7]	1	11
Dupuytren[3]	...	3	Maupin, secondary amputations for gunshot injuries[7]	...	5
Monteggia[3]	...	1			
Wrabiez, in Vienna[4]	1				
Kern	2	3	Total	40	33

In endeavouring to arrive at a correct estimate of the value of amputation at the knee-joint, it is well to regard the operation from a twofold

[1] For the cases referred to under the first twelve names, see Velpeau, Op. Surg., N. Y., 1856, p. 239.

[2] Ollagnier, Gaz. Méd. de Paris, 1849, p. 84 et seq.

[3] N. Y. Journ. of Med., Nov. 1852, p. 324.

[4] For this and the cases referred to under the succeeding fourteen names, see Günther, Blütige Operatione, Leipzig, 1855, facic. 13, p. 109.

[5] Canstatt, Jahresbericht, 1857, p. 219.

[6] Langenbeck's Archiv, 1865, Bd. 7, Heft. 2, p. 493.

[7] Uhde, die abnahme des vorderarms, Braunschweig, 1865, p. 134.

point of view—*first*, as to the fatality of the operation especially as compared with amputation of the thigh; *second*, as to the character and utility of the resulting stump.

First. As to the fatality of amputation at the knee-joint. In determining this question we must refer to the statistics of the published cases. Unfortunately, it happens, that the number of reported operations is but limited, and if we except the papers of Velpeau, Stephen Smith, Markoe, Zeis, Ollagnier, Mazanowski, and a few others, we find little except the mention of an occasional operation. Indeed, a careful analysis of some of the most frequently quoted tables of knee-joint amputation leads to the conclusion, that many of the reported cases rest upon mere hearsay evidence, and are more than apocryphal. There is such evident duplication of cases, and absence of details, as to forbid the use of these tables as a basis for correct surgical deductions.

In collecting the cases cited in the preceding pages, the writer has admitted only such as bore the stamp of authenticity. All doubtful ones, and those wanting in description, have been excluded from the tabulations, but for the sake of reference they are appended in a supplementary list.

The tables, upon which the deductions of this paper are based, comprehend, it will be seen, the writer's own cases; other unreported American cases, obtained from manuscript sources; the published cases collected by Drs. Smith and Markoe; and well-authenticated published European operations. For purposes of comparison, the results of American and foreign practice are arrayed in separate summaries.

Summary of the Results of American Cases of Amputation at the Knee-joint.

		Cause.	Cases.	Recoveries.	Deaths.
Primary	Condyles left; patella left . . .	Accident	15	11	4
Secondary	" " " " . . .	"	15	9	6
"	" " " " . . .	Disease	12	10	2
"	" " " removed . .	"	1	1	
Primary	Articular surfaces of condyles shaven off; patella left	Accident	2	1	1
Secondary	Articular surfaces of condyles shaven off; patella left	"	2	2	
Primary	Condyles sawn off; patella left . .	"	7	4	3
Secondary	" " " " . .	"	3	2	1
"	" " " " . .	Disease	3	3	
"	" " " removed .	"	2	1	1
	Cause and period of operation undetermined		2	2	
	Total number of cases . .		64	46	18

	Cases.	Recoveries.	Deaths.	Per cent. of mortality.
Primary amputations after accident . .	24	16	8	33.33
Secondary amputations after accident . .	20	13	7	35.
Secondary amputations for disease . . .	18	15	3	16.66
Cause and period of amputation undetermined	2	2		
Total . . .	64	46	18	28

Summary of the Results of Foreign Cases of Amputation at the Knee-joint.[1]

		Cause.	Cases.	Recoveries.	Deaths.
Primary	Condyles left; patella left . . .	Accident	7	4	3
"	" " " removed . .	"	1	1	
Secondary	" " " left . . .	"	5	4	1
"	" " " " . . .	Disease	13	10	3
"	" " " removed . .	"	8	5	3
Primary	Articular surfaces of condyles shaven off; patella left	Accident	1	1	
Secondary	Articular surfaces of condyles shaven off; patella left	"	1	1	
"	Articular surfaces of condyles shaven off; patella left	Disease	1	1	
"	Articular surfaces of condyles shaven off; patella removed	"	1	1	
"	Condyles sawn off; patella left . .	"	3	1	2
"	" " " " removed .	"	6	5	1
	Total cases . . .		47	34	13

	Cases.	Recoveries.	Deaths.	Per cent. of mortality.
Primary amputations after accident . . .	9	6	3	33.33
Secondary amputations after accident . .	6	5	1	16.66
Secondary amputations for disease . . .	32	23	9	28.75
Total . . .	47	34	13	27.65

Table showing the Aggregate Results of American and Foreign Amputations at the Knee-joint.

	Cases.	Recoveries.	Deaths.	Per cent. of mortality.
Primary amputations after accident . .	33	22	11	33.33
Secondary amputations after accident . .	26	18	8	30.77
Secondary amputations after disease . .	50	38	12	24.
Cause and period of amputation undetermined	2	2		
Total number of cases . . .	111	80	31	27.92

[1] All amputations performed according to Mr. Carden's method have been excluded from this table.

Table showing the Mortality attendant upon the Retention or Removal of the Condyles of the Femur in Amputation at the Knee-joint.

Condyles left.	Cases.	Recoveries.	Deaths.	Per cent. of mortality.
American cases	45	33	12	26.66
Foreign cases	34	24	10	29.40
	79	57	22	27.84

Condyles removed.	Cases.	Recoveries.	Deaths.	Per cent. of mortality.
American cases	19	13	6	31.57
Foreign cases	13	10	3	23.
	32	23	9	28.12

The tables of the American operations embrace, it will be seen, 64 cases; of these 18 died, a mortality of 28 per cent. In 45 cases the condyles of the femur were not removed; of these 12 died, a death rate of 26.66. In 19 cases the condyles were sawn off to a greater or less extent; the mortality then being 31.57 per cent. In contrast with these figures the results of European practice would appear to be, a general death rate in 47 cases, of 27.65; for 34 cases in which the condyles were left, a mortality of 29.40; and in 13 cases in which they were removed, 23 per cent.

The rate of mortality for the aggregate American and European cases, 111 in number, is a little less than 28 per cent.; for 79 cases in which the condyles were left, 27.84; and in 32 cases in which they were removed, 28.12 per cent.

The mortality attendant upon 33 primary knee amputations after accident is 33.33 per cent.; upon 26 secondary amputations after accident, 30.77 per cent.; and upon 50 amputations for disease, 24 per cent.

From these data, it would seem that the mortality of amputation at the knee-joint is about 28 per cent. Pure disarticulation, in which the condyles and patella are left undisturbed, appears to be rather more favourable than disarticulation accompanied by ablation of these parts.

From the most recent statistics of the Surgeon General's Office, presented on a preceding page, the general average mortality of all cases of amputation at the knee-joint occurring in military practice during the rebellion, and reported to the Bureau, was about 50 per cent.

If we compare the mortality rate of amputation at the knee-joint with that attendant upon thigh amputation, the difference in favour of the former is most striking. By Mr. Syme the latter is set down at from 50 to 70 per cent. The statistics of M. Malgaigne, for the same operation in the Paris hospitals from 1836 to 1841, showed a mortality of 62.6 per cent.

Trelat's statistics, for the same hospitals from 1850 to 1861, give a death rate of 52.7 per cent. Dr. Gross, in his *Treatise on Surgery*, gives a mortality rate of 41.4 for 164 amputations in continuity of the thigh performed in American hospitals. For 194 amputations of the leg the same author states the death rate to be 35 per cent.

In view of the mortality incident to amputations of the leg and thigh, the question naturally arises, why is it that amputation through the knee, an intermediate point, is attended with comparatively less risk? This probably is owing:—

1. To the diminished shock of operation, which has always appeared to be a marked feature of this amputation. There is scarcely any operation of corresponding gravity, and certainly no major amputation, which is accompanied by so little—whether this be owing to the circumstance, that in this disarticulation as now generally practised by skin flaps, there is so little section of muscular tissue; or to the fact that the shaft of the thigh bone is not sawn across, or to both, is not clear. But it is undoubtedly true, that the shock in this amputation is disproportionately less than that of any other in its vicinity. In the writer's practice, this has more than once been regarded as a strong indication for the performance of the disarticulation.

2. To the nature of the tissues involved. If the disarticulation of the knee be practised by the circular process of Velpeau, the oval one of Baudens, or by the formation of antero-posterior or of lateral skin flaps, excessive incision and exposure of the muscular tissues is avoided. The suppurating surface is thus reduced to a minimum amount, and the chances of death from exhaustion are thus proportionately decreased.

3. To the fact, that in the disarticulation at the joint, and in the amputation through the cancellated structure of the femur, the shaft of the femur is not sawn across. Perhaps one of the most frequent causes of death after amputation in continuity in the lower extremity is pyæmic poisoning, so often the result of osteo-myelitis. The experience of our army surgeons in the late rebellion has, we think, shown this conclusively. The writer's observation in military practice has impressed him with the conviction that in all amputations in continuity, the patient's immunity from inflammation and disintegration of the medullary structures of the bones, is greatly influenced by the point at which the saw is applied. The nearer to the centre of the bone this is done the greater, probably, will be the chances of osteo-myelitis, and its disastrous sequelæ. A section of the bone through the cancellated structure or section through the epiphysis may, therefore, be regarded as less threatening to the life of a patient, all other circumstances being equal. This view appears all the more probable when it is remembered that the medullary canal exists only in the shaft of the bone, at the centre of which its diameter is greatest, and that it disappears as it approaches the epiphysis.

Dr. Markoe has already pointed out the liability of the femur to the formation of long tubular sequestra when its medullary canal has been opened, a remark which reference to the shelves of our different museums, and especially to that of the Army Medical Museum, will abundantly corroborate.

Danger of Amputation at the Knee-Joint.—Apart from the shock of operation, and the risks attendant upon all amputations, one or two points deserve especial notice in connection with knee amputations. The first of these is the occurrence of synovial inflammation, an event which seems to have been, and which still is feared by some. But, in reality, this is but an imaginary peril, for, as Dr. Stephen Smith has justly observed, "dangerous consequences from this source are rare exceptions in the severer wound of bisection of this articulation in amputation."

In none of the cases, which came under the writer's observation, have any unpleasant consequences been developed which could be charged to this cause. Indeed, it is not easy to see how they can occur, when it is remembered that the articulation is destroyed by the very performance of the operation, and also that in the course of a few days all traces of the synovial membrane disappear.

There is, however, one condition often encountered after knee amputations which does not seem to have met with the attention its gravity demands, save at the pens of some of the German writers. We refer to inflammation of the tendinous sheaths of the biceps, sartorius, semimembranosus, semitendinosus, and gracilis muscles. The invasion of this inflammation usually takes place from the second to the fifth day after the operation, and is attended by great swelling, tenderness on pressure, and pain in the stump, with considerable constitutional irritation. The stump assumes a bulbous appearance, and the progress of the inflammation is rapid and tends to suppuration. In those cases which the writer has observed, the biceps tendon was most often and earliest attacked. Occasionally the bursa over the patella became involved. The only treatment consists in early and free evacuations of these abscesses, otherwise extensive burrowing may occur, and the patient sink from pyæmia and exhaustion.

The *healing process* after amputation at the knee-joint may, under favourable circumstances, take place almost by first intention. This occurred in Case II., operated upon by the writer. When this happens the integuments covering the end of the femur are usually loose and movable, and the stump is best fitted to sustain pressure. Most frequently, however, only a partial direct union of the flap takes place, and here and there patches of slough separate from their edges. These sloughs leave the articular cartilage uncovered, and in several instances the writer has been enabled to study the process by which the cartilage loosens from the bone. Sometimes it softens, assumes a grayish appearance, and disappears,

as it were, molecularly, gradually thinning; its particles being pushed off by the granulations from beneath, and washed away in the discharges.

About the eleventh or twelfth day after the operation, the vessels on the end of the bone beneath the softening cartilage become visible, and generally by about the twentieth day, the cartilage has entirely disappeared—at the same time the granulations from the bone spring up rapidly, and coalesce with those growing from the marginal surfaces, and from the crucial ligaments and soft tissues of the inter-condyloid notch. In other instances, on about the eighteenth or twentieth day, the softened articular cartilage separates in a thick layer from the subjacent bone, and can be readily removed in bulk with the forceps. The granulating process then takes place as already described. The growth of these granulations from the surface of the bone is usually so rapid that by the twenty-sixth or eighth day they reach the level of the surrounding soft tissues.

Operative process.—The main indication in the disarticulation of the knee is to obtain a sufficient amount of integumental covering to admit of the lips of the wound being brought together without strain. Whether this be accomplished by the circular or oval method, or by the formation of lateral, or of antero-posterior flaps, matters but little. The writer's experience inclines him to give the preference to the latter procedure. The anterior flap should, if possible, be cut long, so as to rest smoothly and loosely over the articular end of the femur. The cicatrix will then be out of the line of pressure on the application of an artificial limb.

The lateral flap method, first used by Rossi, has in the hands of some operators given satisfaction. It is well spoken of by Dr. D. P. Smith, late surgeon U. S. Vols., whose experience in regard to this operation has been considerable, and it has recently been employed by Dr. Stephen Smith in case 37, herewith reported. From his own observations the writer has thought, that in the lateral flap method the condyles are less liable to remain satisfactorily covered, and are more apt to project should any sloughing of the margins of the flaps occur, which probably happens to a greater or less extent in nearly all cases. Should sloughing take place after either of the other methods, the portion of bone uncovered is usually upon the posterior surface of the stump, a position of less importance than those exposed by the retraction or loss of any part of the lateral flaps.

One advantage the bilateral flaps unquestionably offer, and that is a dependent drainage for the wound. The importance of free drainage after disarticulation of the knee cannot be too strongly insisted upon, and no matter what operative process may be employed, it is clearly the surgeon's duty to see that a free vent is at all times afforded to the fluids collected under the coverings of the flap. Neglect of this precaution has to the writer's certain knowledge in more than one instance threatened a patient's life.

The formation of a posterior flap from the muscular tissues of the calf does not appear to have proved very successful in practice. It was abandoned by Mr. Syme, on account of the increased shock of the muscular section, the awkward fitting of the flap, the exhaustive suppuration, and the greatly increased risk of secondary hemorrhage.

The *Secondary Hemorrhage*, which follows amputation at the knee-joint is peculiar in its character, and deserves a careful consideration. It usually makes its appearance after reaction has been fairly brought about, and when the collateral circulation of the vessels of the stump is well established. The bleeding begins insidiously, and appearing at first to be passive in its character, does not excite apprehension. It is usually however obstinate, and there is a constant oozing from the wound. This it is difficult to arrest except by pressure over the main trunk, and when checked it is apt to recur at short intervals, on the removal of the pressure.

This hemorrhage which the writer on several occasions has had the opportunity of studying, takes place from the divided extremities of the articular vessels, especially of the azygos and inferior articular arteries, which are more particularly distributed to those internal structures divided in the section of the joint; these vessels, too small at the moment of operation to attract attention, subsequently enlarge and give rise to hemorrhage, which becomes serious from its continuance.

This circumstance appears to the writer of sufficient moment to be considered in the selection of the method of operation, which should be so conducted that the popliteal artery may be divided squarely across on the line of the articulation, and above the point at which the middle and lower articular arteries are given off. Such a result cannot of course be obtained in the performance of the amputation by the posterior muscular flap, for here the vitality of the large portion of the gastrocnemial muscle included in the flap, must to a great degree depend upon the integrity of the sural arteries. But as it is probable that these latter cannot be preserved, except at the risk of secondary bleeding from the joint structures, supplied by the articular arteries at higher points of origin from the popliteal, an additional reason is offered for the rejection of this mode of operation.

Another source of hemorrhage is the popliteal vein, which, when divided, is apt to gape, and unless tied may bleed to a considerable extent. This patency of the vein may be due to the firmness of the tissues in which it is imbedded, its many branches, and perhaps, also, as pointed out by Mr. Carden, to the disturbing pulsation of the neighbouring popliteal artery. In performing this amputation the writer has been in the habit of ligating the vein, and in no instance has any ill effect been observed.

The second point to be considered, is the *value of the stump* obtained after amputation at the knee-joint. Upon this subject patients, surgeons, and surgical mechanicians are agreed. Their testimony is nearly unanimous as to the serviceability of the stump, and its fitness for the adapta-

tion of an artificial limb. In all of the operations, which have come within the writer's observation, the result in this respect has been favourable. There is seldom any tenderness on pressure, the patient generally bears his weight freely upon the end of the stump and can use an artificial limb with ease and comfort. The degree of motion preserved by the stump is wonderfully great, especially the power of rotation. In all of these cases the advantage of preserving the tendinous insertion of the adductor magnus muscle is manifest, and its effect in increasing the firmness of the patient's gait in walking is very marked. After the lapse of a year or two, and often much sooner, the condyles of the femur undergo considerable changes. They become smaller, rounder, and smoother, and, in fact, the end of the thigh bone assumes the same characteristics it would have possessed had the articular surfaces and condyloid projections been sawn off.

The writer has been informed by Mr. Palmer, the manufacturer of artificial limbs, that from a mechanical point of view he considers a good knee stump to be better suited for the adjustment of an artificial limb, than a good thigh stump. He also states that even though a slight degree of tenderness exist upon the surface of the stump after disarticulation at the knee, the artificial limb can be so applied by means of lacings as to sustain the weight of the body without permitting any pressure to be received upon the sensitive end of the stump.

It will be observed that in the present article no attempt has been made to consider in detail the indications for the performance of amputation through the knee. In general terms it may be stated that the operation can be resorted to with propriety, in many of those cases of injury and disease, which have hitherto demanded amputation through the lower third of the thigh; *provided* the integuments of the knee are sufficiently healthy to furnish material for flaps and *provided* also that the condyles of the femur are not involved to too great an extent.

Thus, amputation at the knee-joint might be performed:—

1. In crushed and compound fractures of the bones of the leg, extending up to, or involving the knee-joint.

2. In gunshot fractures of the bones of the leg, in the vicinity of, or involving the knee-joint.

3. In gunshot wounds of the knee-joint.

4. In gangrene of the leg, the result of injury to the great vessels or nerves.

5. In chronic and irreparable disease of the bones, or for tumours of the leg.

6. In degeneration, and abscess of the knee-joint.

PHILADELPHIA, February 10th, 1868.

ART. II.—*Tumours of the Brain; Clinical History and Comments.* By ROBERTS BARTHOLOW, M. D., Professor of Materia Medica and Therapeutics in the Medical College of Ohio; Lecturer on Clinical Medicine, and Physician to the Hospital of the Good Samaritan; Lecturer on Morbid Anatomy, and Pathologist to the Commercial Hospital of Cincinnati, &c.

THREE cases of tumour of the brain have come under my charge in the wards of the Hospital of the Good Samaritan, during the past year; unfortunately, one only could be followed to its termination, and the diagnosis verified by an autopsical examination. The symptoms in the other cases, however, were so characteristic as to leave no room for doubt. The large number of observations which have been accumulated, the recent advances made in our knowledge of the physiology of the brain, and the improved methods available for investigation, have greatly increased the facility and certainty of diagnosis. Although, in view of what has been accomplished, the cases here narrated may not possess the merit of novelty, they will serve as centres about which the best ascertained facts may be grouped. They will illustrate, also, whatever of certainty and uncertainty exists in the diagnosis of this class of cerebral affections. Careful study of the symptomatology of cerebral tumours will contribute to our knowledge of the functions of the brain—for these growths, in many instances, impinge upon or destroy parts without affecting neighbouring organs, more perfectly than can be accomplished by the knife of the experimental physiologist. On the other hand, as the brain is a compound organ, made up of many different parts having different functions, a tumour involving one or more of these parts will be accompanied by symptoms correspondingly diverse. Any case, therefore, carefully reported, especially if verified by autopsical inspection, must possess a certain value not only for the student of physiology, but also for the practical physician.

CASE I.—Tim, an Irishman, aged about forty, of light complexion and full habit. Admitted September, 1866. He had had, for several months, a persistent headache, accompanied with "swimming in the head," and difficulty of locomotion. He referred the origin of these symptoms to that not unusual Irish accident, sunstroke—(epileptic seizure?)

Symptoms on Admission.—When brought into the ward he is supposed by the attendants to be intoxicated. His gait is staggering; he is noisy and talkative; and his face has a bloated, dissipated appearance. When an attendant leads him forward, he manifests a strong tendency to backward movements; he throws his head and shoulders backward, and moves his legs forward only as compelled by the forward propulsion; when the force propelling him is withdrawn, he tends backward by rapid steps, and would fall supine if not arrested. An evident degree of ataxia exists; his gait is hesitating, somewhat like that observed in progressive locomotor ataxia, and he manifests a great fear of falling. When moved

to and fro by the attendants, he becomes angry and noisy; but his good humour returns with his sense of security when seated in a chair.

His eyes are prominent and staring; pupils dilated, and responding slowly to the stimulus of light. It is ascertained that vision is dim (amblyopia). Hearing is obtuse, which he attributes to *tinnitus aurium*. He complains of severe attacks of cephalalgia, which he refers chiefly to the occiput. Sensibility is somewhat heightened in the distribution of the fifth pair. There is decided paresis of the facial, which gives to his countenance its blank and expressionless character. So far as can be ascertained there is no alteration of the sense of taste. The tongue is not impaired in any of its movements; he talks volubly in a voice pitched in a high key. Much of his conversation is in reference to the illusions produced by his disorder of vision, but he reasons correctly on all subjects which he can consider subjectively.

Progress of the Case.—But slight changes were noted from week to week. His perception of light gradually diminished. Some congestion of the conjunctivæ appeared; the pupils continued dilated, sluggish in movement, and finally ceased to respond to the stimulus of light (amaurosis). The peculiarities in his locomotion noted at the time of his admission, continued. The hyperæsthesia of the fifth and the paresis of the seventh, increased slowly. In eating, which he did voraciously, he was unable to maintain control of the food, a portion of which, in spite of all his efforts, escaping from his mouth. Deglutition continued unaffected. Respiration, sanguification, and calorification were normally performed.

As the case progressed his mind became enfeebled. He grew more noisy and quarrelsome, and had paroxysms of fury which rendered it necessary to confine him. His fits of fury subsided, generally, when he was left alone. During the whole period of his stay in the hospital he had no convulsions, no vomiting. The tendency to backward movement became much more decided at the last, so that it was difficult to move him forward. A part of this peculiar movement seemed to be due to his blindness and a fear of falling. When compelled to move he manifested considerable terror. This was particularly observable when brought into the lecture-room in presence of the class.

It is much to be regretted that no ophthalmoscopic examination of his eyes was made. There can be no doubt, however, that they were in the condition observed in the case next to be related.

After a stay of three months in the hospital, Tim was transferred to the County Infirmary, and all trace of him became lost.

Commentary.—The symptoms in this case—the pain in the head, the vertigo, the impairment of vision, the hyperæsthesia of the fifth, the paresis of the seventh, the attacks of fury, the illusions, the disorders of locomotion, and, finally, the progressive feebleness of the intellectual faculties—indicate a lesion of the encephalon. In making up the differential diagnosis, we may at once exclude all acute affections of the organs within the cranium.

It is not a case of progressive paralysis. The first symptoms of this disease are paralysis of the tongue, muscular feebleness and paralysis, impaired intellectual power,[1] &c. Our patient, Tim, presented none of

[1] Calmeil, De la Paralysie considerée chez les aliénés, &c., p. 10 et seq. Paris, 1826.

these symptoms except impairment of intellection; which, however, came on late in the progress of his case. He had neither paralysis of the tongue nor of any of the voluntary muscles except those supplied by the facial. A very marked distinction exists between defects of co-ordination and backward movements, and muscular paralysis.

It is not a case of senile dementia. In an immense majority of cases, says Marcé,[1] senile dementia takes its origin in an attack of apoplexy, acute softening, or softening of a chronic and progressive form. Paralysis, hemiplegia, or general paralysis, is an attendant symptom in all these cases.

It is not a case of progressive locomotor ataxia. The case of Tim agrees with this disorder as respects the difficulty of co-ordination, and the occurrence of certain ocular derangements. But there are well-marked points of difference. In ataxia, pains in the extremities presumed to be rheumatic, numbness, tingling, and various referred sensations precede the disorder of co-ordination. The ataxia, of the progressive locomotor ataxia, is very different in character from that observed in Tim's case, and is not accompanied by the tendency to backward movements. Moreover, the phenomena of cerebral congestion, the attacks of fury, the hyperæsthesia of the fifth and the paresis of the seventh, and the intellectual derangement, are very different symptoms from those observed in progressive locomotor ataxia.

In coming to a conclusion as to the seat of the lesion in this case, we are aided by the facts of experimental physiology and of pathological anatomy.

Flourens, in 1822, as the result of his vivisections, concluded that the cerebellum is the exclusive seat of the power to co-ordinate muscular movements. Magendie, Longet, and various experimental physiologists, arrived at the same conclusion. Magendie, however, advanced a point beyond this. He demonstrated that the cerebellum presided over the forward movements, and that the corpora striata exercised a similar office for the backward movements. When he ablated the cerebellum, the animal experimented on manifested a strong tendency to backward movements; and when he ablated the corpora striata, to violent forward movements. These conclusions of Magendie, a long time disputed, have been confirmed in a striking manner by two able physiologists experimenting in the same direction, by the same means, and at the same time, in different hemispheres. I allude to the investigations of Drs. Mitchell[2] of Philadelphia, and Richardson, of London.[3] These gentlemen succeeded in abolishing, for

[1] Recherches Cliniques et Anatomo-Pathologiques sur la Démence Sénile et sur les Différences qui la Séparant de la Paralysie Générale. Paris, 1863.

[2] American Journal of the Medical Sciences, January, 1867.

[3] Medical Times and Gazette, May 25, 1867. The priority in these investigations clearly rests with our countryman, Dr. Mitchell.

the time being, the functions of certain portions of the encephalon by freezing them with rhigolene and ether spray. They both ascertained that suppression of the functions of the cerebellum by freezing produced backward movements. In Richardson's language, "The animal, without the cerebellum, shows evidence of backward movements; which means that the controlling or compensating power of the cerebellum being cut off, that part of the cerebral organism which commands backward movement is allowed undue play, and overcomes volition or will." In another place he expresses the same idea in different language: "When we see, therefore, an animal fall backwards because its cerebellar functions are positively in abeyance, we see the action of the great anterior cerebral ganglia. Conversely, when we see an animal pitch forward because the cerebrum is rendered inert, we see in play the unchecked forward propulsion of the cerebellum."

These demonstrations are very conclusive, but the facts of pathological anatomy are equally so.

Various cases of affection of the cerebellum have been published, proving that lesion of this organ is accompanied by the peculiar symptoms manifested in this case. Topinard[1] has made an interesting collection of twenty-four cases showing the production of ataxic phenomena in cerebellar affections. Abercrombie[2] gives an interesting account of a tumour of the cerebellum, in which case "the walk was tremulous and unsteady, like a person balancing a burden on the head."

Lallemand[3] gives, in his remarkable collection of cases, various instances of encysted abscess, of softening, and of tumour of the cerebellum, in which these affections produced uncertain and difficult locomotion, cephalalgia, amaurosis—and, indeed, all of the phenomena observed in the cases here reported. In addition to these, but including many of the cases reported by Lallemand, Abercrombie, and Topinard, Luys[4] has collected one hundred cases of disease of the cerebellum, the history and symptomatology of which agree with my own.

I am prepared, then, to state, that in the case narrated in this paper, there existed a chronic affection of the cerebellum. What was the character of the lesion? Not to anticipate the discussion to follow, it may be stated that the history and symptomatology correspond to those which have been observed in cases of *tumour of the brain*. Was the lesion con-

[1] De l'Ataxie Locomotrice et en particulier de la Maladie appelée Ataxie Locomotrice Progressive. Chap. II., art. Premier. Paris, 1864.

[2] Diseases of the Brain and Spinal Cord. Edinburgh, 1836.

[3] Recherches Anatomico-Pathologiques sur l'Encéphale et ses Dependances. Paris, 1820-30. Consult especially the fourth and fifth letters.

[4] Études sur l'Anatomie, la Physiologie et la Pathologie du Cervelet; par J. Luys, Médecine des Hôpitaux de Paris. Archives Générales de Médecine, for October, November, and December, 1864.

fined to the cerebellum? It is quite evident that the facial and auditory nerves were somewhat interfered with. There was neither convergent nor divergent strabismus; vomiting had not occurred. These facts sufficiently indicate that, so long as the patient remained under my observation, the tumour extended but little beyond the boundary of the cerebellum.

CASE II.[1]—I. M. H., aged 43, a native of the United States, by occupation a ship-carpenter. He is 6 feet in height, of dark complexion, and weighs 152 pounds. Previously to the development of the trouble for the relief of which he has sought admission to the hospital, H. has had no other illness than two attacks of acute rheumatism. There is no history of hereditary nervous diseases in his family.

History of the Case.—H. experienced the first symptom of his present disorder sixteen months ago. The attack commenced with headache, nausea and vomiting, pains in the back, extending forwards anteriorly over the right and left inguinal regions and to the glans penis. The pains in the head were severe, but intermittent, and could be relieved by the application of warmth. He vomited frequently during the day, without much effort, and with little action of the abdominal muscles. The loss of flesh which he experienced appeared to be the result of this interference with the primary assimilation. Soon after the foregoing symptoms manifested themselves, H. began to experience disorders of locomotion, and so marked were they that he was accused by his neighbours of intoxication. Physicians whom he consulted called his case "partial paralysis;" a seton was inserted in his neck, and tonics administered. He was admitted to the Hospital of the Good Samaritan November 8, 1867.

Symptoms on Admission.—H. has a countenance of uneasiness and distress difficult to describe. The right palpebral opening being wider than the left, imparts a peculiar expression to his face. His speech is thick and stuttering, but his tongue is protruded without difficulty, and does not deviate to either side. The operations of his mind seem normal, but a friend who accompanied him to the hospital reports that some deficiencies of intellect and peculiarities of conduct have been observed lately. He complains of pain in the forehead and occiput of a neuralgic character, and of attacks of giddiness. At night he is restless, talking in his sleep, and occasionally getting out of bed in a somnambulistic state, walking a few steps, when he falls and awakes. The special senses of smell and taste seem to be unaffected. He hears with the left ear, but is totally deaf in the right. His vision is dim and uncertain. The movements of the ocular globes, particularly the right, are decidedly ataxic (bilateral nystagmus). Prof. Seeley, ophthalmologist to the hospital, thus describes the ophthalmoscopic appearances: "Size of pupils normal. Reflex and accommodative movements normal. Ophthalmoscope reveals congestion of both papillæ, evidenced by the deep pinkish tint, caused by the development of a large number of capillaries, and entire want of definition of papillæ, except a portion of external border. In addition, there is slight exudation along the track of some of the vessels on right papillæ. Veins and arteries of both retinæ enlarged. No hemorrhage along their course."

H.'s appetite is rather poor. He has frequent attacks of regurgitation of food. His bowels are constipated. There is found to be a difference of $1\frac{3}{5}$° F. in his morning and evening temperature. The most striking

[1] Reported by Dr. T. C. Minor, Resident Physician.

symptom is the ataxia in the muscles of the extremities, especially of the right. He cannot stand alone, with his eyes closed. He cannot touch the point of his nose with his right index-finger, unless he guides the hand by his eyes. His walk is staggering and uncertain, very much like that of an intoxicated man. He does not point his toes upward in walking, and bring his heels with violence upon the floor. His muscular strength is preserved. When his leg is flexed upon the thigh, no inconsiderable force is required to extend it. His grasp is as strong as in health. Cutaneous sensibility is rather heightened than diminished; at least this observation is true with respect to sensibility to pain. Sensibility to cold, to heat, and to pressure unaffected. He has no numbness, tingling, or referred sensations in either extremities.

H. remained in the hospital but a few days. Dissatisfied that a cure was not promised him, he left under a pretence of a visit to his family, and did not return.

Commentary.—We have here a disorder which interferes with the power of co-ordinating muscular movements. This fact is exhibited in the ataxic movements of the eyes, of the tongue, and of the muscles of the right lateral half of the body. The malady with which it would be most readily confounded is progressive locomotor ataxia. In this disease, however, cutaneous and muscular anæsthesia, numbness, tingling, and characteristic pains precede and accompany the disorders of locomotion.

A case presenting many points of resemblance has been published by Dr. F. Bateman,[1] physician to the Norfolk and Norwich Hospital. The patient had first shaking of the right hand, which was followed by frontal headache, weakness of legs, and a staggering gait, as if intoxicated. Next embarrassment of speech came on, then dimness of vision, and finally complete blindness, the right eye being the first affected. The order and character of the symptoms are, it will be perceived, almost identical with those which occurred in H.'s case. At the autopsy a steatomatous tumour, the size of a hen's egg, was found "adherent to and apparently springing from the posterior surface of the petrous portion of the right temporal and from the basilar process of the occipital bones." It encroached upon the under surface of the right lobe of the cerebellum, the right side of the medulla oblongata, the right crus cerebelli, and the right side of the pons Varolii in its whole extent.

In my clinical lecture upon the man H., I assigned the supposed neoplasm to a similar position.

CASE III.—T. F., an Irish coachman, admitted to the Hospital of the Good Samaritan during the month of October, 1866.

Symptoms on Admission.—His countenance presents an aspect of suffering; he has violent pains throughout the distribution of the left trigeminus; the left eye is suffused and congested, pupil dilated; the left side of the face is swelled, reddened, and excessively sensitive.

His intellectual acts are normally performed. He describes his sensations

[1] Beale's Archives of Medicine, April 16, 1867.

with accuracy, and talks rationally on any subject within the range of his acquirements. He ascribes his sensations to sunstroke received during the month of July. Since the time of this supposed attack he has suffered more or less from headache, but especially from the pain in the left side of the face. Reflecting over his history, aided by the subsequent developments in his case, it is not improbable that this so-called "sunstroke" was really an epileptic seizure.

At this period he seemed absolutely free from all symptoms other than those just detailed. His case was accordingly considered one of tic douloureux, due to some intra-cranial trouble.

Progress of the Case.—In a few weeks after his admission new symptoms declared themselves. It was observed that he had some difficulty in maintaining the erect position, that he staggered in walking, and that he preferred to lie in bed upon his back. He still referred his suffering chiefly to the distribution of the fifth, but he also complained of a dull aching of his head. The left eye continued much congested, the pupil dilated; the left side of the nostril also became very red and much swollen, and the hyperæsthesia of the left side of the face increased. Considerable hebetude of mind was now observed; his sense of hearing became dull, and taste appeared to be entirely abolished.

One day, after some hours of stupor, he was suddenly attacked with violent convulsions and maniacal excitement, during which he attempted to bite and otherwise injure all who approached him. This state of excitement was accompanied with heat of surface and hyperæsthesia, especially of right side of the body and right inferior extremities. After this acute attack, it was observed that both pupils were dilated, and that his perception of light was much diminished. Soon the pupil of the left eye ceased to respond to the light; the redness and turgidity of the conjunctiva, of the face, and of the nostril of the left side increased, and attacks of epistaxis from this nostril became frequent.

The convulsive seizures became more frequent, but occurred at irregular intervals. It was observed that some hours of stupor invariably preceded the attack, and that the convulsion was followed by noisy delirium lasting about twenty-four hours.

The pupils remained dilated and motionless, and at length perception of light was completely lost, although, in answer to my inquiries, he always replied that he saw at "seven o'clock this morning." Prof. Seeley, at my request, made an ophthalmoscopic examination of his eyes, and although this was not very satisfactory, in consequence of the patient's restlessness, the Doctor ascertained that the optic papillæ were altered, the retinal vessels much engorged, and that excavations existed in the retina. He expressed the opinion that the case was one of cerebral tumour. This opinion I had begun to form myself, although misled by the hyperæsthesia of the fifth, I had supposed in the beginning that my patient was labouring under chronic inflammatory trouble, with exudation, involving that portion of the brain from which this nerve takes its origin.

The case increased in gravity. Vomiting and obstinate constipation were superadded to the other troubles. His speech became thick and stuttering, and some dysphagia occurred. His taste was completely lost, so that a drop of croton oil excited no more sensation than a drop of water. He lay at last in a state of semi-unconsciousness, except when roused by his convulsive seizures, when he screamed and raved and seemed in the deepest distress for several hours.

The patient was at length transferred to the Commercial Hospital, where he died on the 14th of April. Prof. E. Williams, soon after T.'s admission, made an ophthalmoscopic examination, which confirmed the previous examination of Prof. Seeley. I quote his observations, as recorded by Dr. James T. Whitaker, resident physician. The examination "revealed an enlarged and tortuous condition of the retinal veins and blurred appearance of the optic papillæ, with structural retinal changes, which he attributed to a tumour somewhere at the base of the brain, interfering with the venous circulation."

I extract from the same report an account of the post-mortem appearances:—

"*Autopsy by Prof. Wm. H. Taylor, M. D., Pathologist to Commercial Hospital, seven hours after death.*—Firm post-mortem rigidity; contusion an inch and a half long over left supra-orbital ridge; dry herpetic eruption on upper lip; bedsore covering entire sacrum, and one over each trochanter; more than usual contraction of fingers. Over right half of frontal bone recently extravasated blood in connective tissue; dura mater firmly adherent to calvarium; membranes much engorged with blood; increased number of *puncta vasculosa* in substance of brain; two ounces of colourless serum in lateral ventricles, which were expanded in transverse diameter; effusion into infundibulum compressing optic commissure; small amount of serum in middle fossa; anterior portion of right hemisphere of cerebellum firmly adherent to cranium; lying anteriorly to and below the right hemisphere a firm nodulated tumour, which was enveloped in a distinct capsule attached to, but easily separated from, the membranes; tumour $4\frac{1}{2}$ and $3\frac{1}{2}$ inches in its circumferences, encephaloid in structure, consisting, under the microscope, of cells and exudation-corpuscles inclosed in a fibrous stroma. (?)

"Tumour had compressed the right half of the medulla oblongata towards the median line, implicating the right pneumogastric nerve.

"Imbedded in the substance of the cerebrum, above and behind the tumour, was a pyriform cyst, two inches in its long diameter, and one and a half inch in its short, the apex of which extended into the crus cerebri. Surrounding brain substance of semifluid consistence."

Commentary.—These cases agree in many respects, but also present points of difference, due, no doubt, to the different position of the tumour in each case. An analysis of the symptoms will exhibit this fact fully.

Cephalalgia was the first symptom noted in each case, but it was more violent, constant, and "obstinate" in the first than in the others. This symptom has been generally observed in cases of tumour of the brain, especially when the growth occupies or involves some portion of the cerebrum; but it is also present in the cases of tumour of the cerebellum, pons, and medulla. Ladame,[1] in a collection of twenty-six cases of tumour of the annular protuberance found that headache was a symptom in sixteen. It is rarely distinctive of the position of the tumour, being generally deep-seated, widely distributed, and not confined to a special locality. In some cases of tumour at the base, the pain is localized at the

[1] Des Tumeurs de la protubérance annulaire. Archives Générales de Médecine, Août et Septembre, 1865. I regret my inability to procure Dr. Ladame's "Symptomatologie und Diagnostik der Hirngeschwülste."

occiput; in some cases of tumour of the hemisphere, pain is confined to the upper part of the head and to the forehead. Ladame considers cephalalgia a symptom of great importance, especially when it comes on without obvious cause, persists and increases in violence. Rostan,[1] on the other hand, regards headache as a very constant and characteristic symptom in softening. Both writers use the same term, *opiniâtre*, in describing the character of the headache. In cases of *ramollissement*, however, feebleness of the intellectual faculties and paralysis quickly follow the first onset of cephalalgia. Todd[2] thinks that "where the pain, whether sharp and burning, or dull and heavy, is fixed in its situation, and varies only in intensity, and not in locality; it may generally be referred to intracranial irritation, such as would probably arise from disease of the membranes, or of some superficial parts of the brain." In the beginning of these various affections of the brain, it would certainly be assuming too much to assign a definite diagnostic value to the cephalalgia.

In the first case, the headache, in the beginning, had an intermittent character; but it finally became continuous, and increased in severity, and was not localized. In the second case, the pain seemed superficial, rather in the scalp of the forehead and occiput than in the brain itself—for not only was the pain neuralgic in character, but it was relieved by the application of warmth. In the third case, a violent tic seemed to be substituted for the headache, yet in the paroxysms of excitement attended by convulsions the manner in which the patient applied his hands to his head indicated excruciating cephalalgia. The hyperæsthesia of the left trigeminus in case third is a remarkable fact. The "nodulated tumour" and the cyst both occupied the right side. Unfortunately, the account of the post-mortem appearances does not state clearly the precise position of the tumours and the parts impinged upon by them, but it is evident enough that they could not have involved the left trigeminus.

Alterations of sensibility in parts supplied by the fifth, are very common, and the hyperæsthesia cannot be distinguished, as Ladame has well observed, from ordinary facial neuralgia. In T.'s case, the tic of the left side was the only symptom at the time of his admission into the hospital. It was so well-marked a case of neuralgia of the trifacial, due to some intracranial trouble, that I made it the subject of a clinical lecture. At this time the left pupil was dilated; the sight was dim, and the conjunctiva intensely congested; the whole side of the face was swollen, the left anterior nares injected, and the left half of the upper lip covered with an eczematous eruption. These alterations in the nutrition of the parts supplied by the trigeminus, are common enough in ordinary cases of tic-douloureux, and hence their occurrence in this case afforded us no precise in-

[1] Recherches sur le Ramollissement du Cervau, p. 12, deux edition. Paris, 1823.
[2] Clinical Lectures on Paralysis, Am. ed., p. 34.

dication of the nature and position of the intracranial trouble.[1] Ladame has observed these symptoms in tumours of the middle fossa, and Romberg reports a case in which they were produced by an aneurism of the internal carotid. In both of these the fifth was directly involved. The peculiarity of the case here reported consisted in the production of a violent tic in the left side, the lesion being on the right. Schrœder Van Der Kolk,[2] as also Luys, have published observations which explain this apparent anomaly. They show that although "the nerves of sensation do not decussate, and terminate in nuclei on their own side, the impression produced in them is conveyed to the opposite side. . . . No anatomist has ever asserted that the sensitive root of the trigeminus itself arises from the opposite side of the medulla oblongata. . . . It is, however, evident that the sensitive influence must be conveyed to the opposite side, just as occurs in the nerves of motion, as otherwise no harmony could exist between the two sides. Hence it appears that the perception of sensation cannot be situated in the nuclei of the nerves themselves, as those of the vagus, glosso-pharyngeus, and trigeminus; but the impression excited here must be conveyed by other fibres, which, as we have seen, decussate to the other side." Luys[3] describes, in a similar manner, the commissural fibres which connect the trigemini.

In each of my cases, affections of the organs of sense existed. These are very common in tumours at the base. In twenty-seven cases of tumour of the cerebellum recorded by Luys,[4] feebleness of vision, or amaurosis, was observed in ten; and other disorders of vision in three. Deafness was noted in four. Friederich,[5] in forty-four cases of tumour of the cranial cavity in general, has found disorders of the organs of sense twenty-six times; vision alone, twelve times; and associated with derangement of the other senses, thirteen times. Ladame has observed them twenty times in twenty-six cases. The latter, in his paper in the *Archives Générales*, thus states the relative frequency of these disorders of the organs of special sense in tumours of the annular protuberance:—

[1] Axenfeld, Des Nevroses; Romberg, Manual of the Nervous Diseases of Man, Sydenham Society translation; Recherches sur quelques troubles de Nutrition consecutifs aux Affections des Nerves, par J. B. A. Mougeot: Paris, 1867. The last-named makes frequent references to the very important contributions of our own countrymen, Drs. Mitchell, Morehouse, and Keen—"Gunshot and other Injuries of Nerves."

[2] On the Minute Structure and Function of the Spinal Cord and Medulla Oblongata. Syd. Soc. translation, p. 113.

[3] Recherches sur le Système Nerveux, &c.

[4] Ibid., p. 78.

[5] Quoted by Perrenout, Étude Clinique sur le Diagnostic des Tumeurs Cérébrales. (Arch. Gén.)

Convergent strabismus	6
Divergent strabismus	1
Diplopia	2
Ptosis	2
Dilated pupils	4
Inequality of the pupils	2
Contracted pupils	1
Insensibility of the conjunctiva	1
Injection or inflammation of the conjunctiva	2
Amblyopia or amaurosis	10
Dulness of hearing, or deafness	7
Noises in the ear	2
Alterations of taste	6
Alterations of smell	4

These affections of the senses are variously combined. Ladame arranges them as follows:—

Vision, hearing, smell, and taste	1
Hearing, smell, and taste	1
Vision, hearing, and smell	1
Vision, smell, and taste	2
Vision, hearing, and taste	1
Vision and hearing	3
Taste only	1
Hearing only	2
Vision only	2

These statistics show that the eye is more constantly affected than any of the organs of special sense. In each of my cases there were disturbances of vision; in two, amaurosis; in one, dimness of vision; in two, loss of hearing upon one side was observed; in one, loss of taste occurred.

The most interesting and important circumstance, as respects the organ of vision, is the occurrence of amblyopia and amaurosis. As the statistics above quoted show, this symptom is observed in nearly one-half of the cases of tumour occurring at the base of the brain. I was fortunate in being able to avail myself of the aid of Prof. Seeley's careful ophthalmoscopic examination of Cases 2 and 3. His description of the condition of the retina in Case 3 was also confirmed by a subsequent examination made by Prof. E. Williams. The alterations of the retinæ, as described by these very competent observers, correspond to the description of Bouchut, as given in his very elaborate volume.[1] He says:—

"The principal and most definite lesion is *amaurosis*, the result of atrophy of the optic nerve produced by lesions of the circulation (hyperæmia, or serous infiltration), which occurs in the beginning of the disease. When the atrophy is fully established, vision is irrevocably lost. The

[1] Du Diagnostic des Maladies du Système Nerveux, par l'Ophthalmoscopie, p. 300. Paris, 1866.

nerve-cells and tubes are converted into connective tissue, into adipose tissue, and amyloid matter. During life this state of things may be recognized, on ophthalmoscopic examination, as an atrophy of the optic papillæ. At the fundus of the eye the papillæ appear blanched, glistening (*nacrée*), having at their centre a whiter spot, in which the ordinary concentric rings are scarcely visible. The papillæ diminish in size, becoming irregular, ragged, or deeply excavated, and the smaller vessels lessen in volume and finally disappear, leaving only the principal veins of the retina."

Bouchut gives, in the body of his work, several instructive wood-cuts, which exhibit the changes in the papillæ, and the deep excavations sometimes produced in the retina. In the atlas accompanying his work are several plates showing the ophthalmoscopic appearances of the retina.[1]

Ladame, however, in describing the condition of the retina in cases of tumour of the brain, observes that two varieties of atrophy of the optic nerve exist. The first variety, which, he says, takes place without inflammation, corresponds to the description just quoted from the work of M. Bouchut. The second variety is that in which atrophy follows neuritis; in this condition the papillæ, instead of being white and glistening, become blurred, the vessels tortuous, and pigment accumulates about the nerve entrance.

"Mr. Wecker supposes that when an intracranial tumour grows very rapidly, it causes neuritis; whereas, when the growth is more gradual, it may give rise to progressive atrophy, especially when it directly presses on the roots of the optic nerve." But it is not necessary that the intracranial disease should involve the optic nerve-fibres in any part of their course in order to produce amaurosis. Dr. Hughlings Jackson says: "So far as the production of optic neuritis, by intracranial disease, is concerned, the *position* of the disease seems to be of little consequence, and there is nothing very peculiar in its nature, except that it is usually coarse."[2]

Liebreich[3] gives two figures, showing the blurred appearance of the papillæ in cases of cerebral tumour. Galezowski[4] also gives two figures, showing the changes in the retina in a case of tumour of the posterior fossa. First there occurred a neuritis—a varicose condition of the central vein, and especially of the capillary vessels of the papillæ. This neuritis resulted in complete atrophy. At page 150 Galezowski describes more in

[1] Sichel, in 1859, appears to have been the first to employ the ophthalmoscope in the diagnosis of cerebral affections. In the following year, 1860, Graefe communicated several cases to the Biological Society. Droux also published, in 1862, a number of cases which he had observed at the clinic of Desmarres. (Bouchut.)

[2] Ophthalmic Review, vol. iii. p. 48. Quoted in Dublin Quarterly Journal, November, 1866.

[3] Atlas d'Ophthal., Pl. xi., Figs. 7, 8, and 9. See especially Figs. 8 and 9, and consult remarks on these.

[4] Étude Ophthalmoscopique sur les Altérations du Nerf Optique et sur les Maladies Cérébrales dont elles dependent. Chap. ii. p. 138. Paris, 1866.

detail the ophthalmoscopic appearances: the papillæ are œdematous and prominent; veins enlarged, varicose, and tortuous; collateral branches enlarged, &c. Three months afterward, vision being lost, he found an atrophy of the papillæ, their margins being fringed and irregular. This condition was produced by an organized peripapillar exudation, and consequent atrophy of the nerve-fibres.

If a cerebral tumour impinge upon or destroy the tubercula quadrigemina or optic chiasm, there can be no doubt as to the manner in which the result is accomplished. Graefe emitted the opinion that the dilatation of the veins of the retina, serous infiltration and atrophy of the nerve, are the results of pressure of the tumour upon the cavernous sinus, whereby the return of blood is prevented. Graefe's followers adhere to this doctrine in spite of the most conclusive demonstrations against it. These views have been successfully combated by Lancereaux, in a paper published in the *Archives Gênérales* for January and February, 1864.[1] This observer has shown that pressure upon the cavernous sinus cannot exist in many cases in which these changes in the retina are found. He reports four cases: in the first, a serous cyst existed in the right anterior lobe; in the second, a neoplasm, the size of a duck's egg, in the depth of the left anterior lobe; in the third, the corpus striatum, and part of the optic thalamus of the right side, were replaced by a membranous neoplasm; and in the fourth, induration of a part of the corpus striatum and optic thalamus of the right side, inflammation of the meninges at the base, and exudation were found. In these cases characteristic alterations were observed in the retina and optic nerve, which could not be referred to a mechanical hyperæmia. With respect to the first case, Lancereaux remarks that "compression of the optic nerves and cavernous sinus was not possible;" in the second, the moderate compression exerted by the tumour on the mass of the cerebral lobe cannot be considered sufficient to cause atrophy of the optic nerve; in the third, so far from the tumour making any pressure, "the brain diminished in volume, occupied but a part of the cranial cavity;" and, in the fourth case, "the idea that a certain degree of compression having determined the amaurosis and atrophy of the optic nerve is not more admissible than in the preceding cases."

These facts are conclusive against Graefe's view, at least in respect to many cases. Nevertheless, there are some cases in which engorgement of the retinal vessels seems to be produced by pressure upon the cavernous sinus. Bouchut notes amaurosis, atrophy of the nerve, &c., in various inflammatory and chronic structural changes of the brain and meninges. He expresses the truth, no doubt, when he asserts that the alterations of the

[1] De l'Amaurose liée à la Dégénération des Nerfs Optiques, dans les Cas d'Alteration des Hemispheres Cérébraux, par le Dr. E. Lancereaux, Chef de Clinique Médicale à la Faculté de Médecine de Paris.

retina are due to congestion, effusion, and inflammatory changes wrought in the brain by the presence of the new formation. Changes similar in character are found in cases of diabetic amblyopia.[1] In Case III. the growths were not in a position to compress the cavernous sinus, and, what is equally significant, the most marked changes in the retina followed the first febrile movement, which was no doubt coincident with inflammation of the meninges in the neighbourhood of the tumour, and with the formation of the so-called cyst in the right posterior lobe of the cerebrum.

Galezowski[2] proposes an eminently rational explanation of the occurrence of amaurosis in the case of neoplasms in the posterior fossa of the cranium.

"These new growths," he remarks, "impinge upon the neighbouring organs, and especially upon the pons and the peduncles of the cerebellum. As the tubercula quadrigemina are situated above the pons, and as the peduncles of the cerebellum communicate with the same bodies, an inflammation of these organs is not unfrequently transmitted to the tubercula quadrigemina, thence to the optic tract and to the optic papilla. Such is the explanation which we have to offer of the occurrence of optic neuritis consecutive to tumours of the basilar process."

With respect to the mode of production of amaurosis in cases of tumour of the cerebral hemispheres, Galezowski makes the following observations:—

"Alterations of the anterior lobes of the cerebrum do not exist long without producing inflammation and softening in the surrounding parts. These lesions may include the organs of sense, and especially the optic nerves, producing an inflammation or an atrophy which travels along the nerve to the papilla. We are able to explain in this way the phenomenon of blindness in the case of tumours and cysts of the anterior lobes. M. Graefe has attempted to explain the coexistence of amaurosis and optic neuritis with cerebral tumours by affirming the compression of the cavernous sinus and the dilatation of the veins producing œdematous infiltration. This opinion may be admitted in respect to voluminous tumours occupying a great part of the anterior lobes, but cannot explain the production of blindness when the tumour is small, and separated from the base of the cranium by a layer of cerebral substance."

M. Galezowski refers, in support of his views, to the able paper of M. Lancereaux which I have already quoted at some length.

Disorders of motility existed in each of my cases. Ladame[3] has ascertained the existence of these disorders in five-sixths of his cases. He divides them, according to their origin, into two classes: 1st, those de-

[1] Recherches sur les Accidents Diabétiques, etc. Par le Dr. Marchal (De Calvi). Paris, 1864. p. 471.

[2] Étude Ophthalmoscopique, etc., op. cit., p. 149.

[3] Quoted from an abstract of Dr. Ladame's work in the Dublin Quarterly for November, 1866.

pendent upon irritation; 2d, those arising from loss of function of some part of the brain. Convulsions, ataxia, choreic and rotatory movements belong to the first class, and the various forms of paralysis to the second. In the first case backward movements and ataxia existed, and also paresis of the facial; in the second, the ataxic phenomena were the marked features of the case; in the third, ataxia, embarrassment of speech, dysphagia, and convulsions were present. The symptoms, then, in these cases were chiefly those of irritation, and as the functions of the cerebellum were impaired in each case, the irritation involved this organ. In the first case the neoplasm extended but little beyond the cerebellum; in the second, the supposed tumour most probably involved the inferior peduncles of the cerebellum and the medulla oblongata; in the third, the cerebellum was impinged upon by the tumour, but the most important symptoms were produced by the pressure upon the medulla oblongata, and the interference with the functions of the pneumogastric and with the ninth, producing nausea and vomiting, difficulty in the movements of the tongue and palate, producing stuttering and dysphagia. Paralysis did not exist in either of my cases, except paresis of the facial. This symptom may often possess great diagnostic value: thus, when the paralysis is crossed, or, in other words, when the face is paralyzed on one side and the limbs on the other, there is good ground for diagnosticating tumour of the pons Varolii. When paraplegia exists, as is sometimes observed, the tumour probably affects the medulla oblongata; in this case the paralysis does not occur in the limbs at the same time, but in one after the other. (*Ladame.*)

In twenty-six cases of tumour of the annular protuberance, Ladame has observed—

Spasms of the muscles of the face in	1
Contractions of members in	2
Tetanic cramps in	1
Convulsions, spasmodic movements, in	3
Epilepsy in	2
Movements of rotation of head in	1
Standing or walking uncertain or impossible in	4
Paralysis, direct, of masseter or temporal	1
" " of facial	11
Paresis of an arm and paralysis of an opposite limb	1
Hemiplegia, complete or incomplete, of side opposite the tumour	12
Paralysis, complete or incomplete, on same side as tumour	1
" general	5
Paresis of an arm on same side as tumour	1
" of both arms, and of a hand of the opposite side	2
Paraplegia	3

It is a curious circumstance that mental derangement occurs as frequently in cases of tumour at the base as in tumour of the cerebrum. In neither of my cases was there any disorder of the mind in the beginning. In the

first case the earliest symptom was the development of a quarrelsome disposition; afterwards illusions and attacks of fury. In the third case there was a marked degree of mental hebetude; afterwards stupor, followed by convulsions and maniacal delirium.

Authors differ as to the comparative frequency of mental derangement. Nasse, according to Perrenout, ascertained that mental derangement existed in the proportion of 19 to 50. Calmeil found mental derangement in one-half of his cases. Andral, who has analyzed 43 cases, ascertained that the intelligence was undisturbed in the most of them. Durand-Fardel, who bases his opinion upon an examination of 70 cases, agrees with Andral. Lebert found mental disorder in one-third—29 in 90 cases. Ladame, whose observations I have had occasion so frequently to quote, says that the intellectual functions were affected in one-half of his cases of tumour of the annular protuberance—a proportion quite as large as that noted by Calmeil in tumour of the brain in general. The psychical disorders, he says, are quite as frequent in the cases of tumour of the base as in the cases of tumour of the hemispheres. The intellectual derangements are no doubt due to inflammation and its products, which are always found in the cases of cerebral tumour.

The cases detailed in this paper show how little characteristic are the first symptoms of tumour of the brain. The cases evolve themselves slowly—so slowly, indeed, that it is difficult to fix the date of commencement. In two of my cases the patients attributed the origin of their troubles to "sunstroke." Generally, the earliest symptom is headache; at first slight and intermittent, but increasing in severity, and becoming finally continuous. The headache is followed by disorders of sensation—anæsthesia and hyperæsthesia, usually of the parts supplied by the fifth. Next follow disorders of motility, disturbances of the special senses, and, lastly, mental derangement.

The peculiar character of the symptoms may indicate the situation of the morbid growth.

In cases of tumour of the cerebrum, the following symptoms are observed: headache, not, however, confined to the seat of the morbid growth, and thus indicating its position, but limited to one side of the head, or deep-seated and diffused; epileptiform convulsions, and mental derangement. Alterations of sensibility and of the special senses do not usually occur. Paralysis is not generally present in tumours of the posterior lobes, but is common in tumour of the middle and anterior lobes. Alterations in the special senses occur more frequently in tumour of the middle lobe, except the sense of smell, which is more usually affected by tumour in the anterior lobe.

Tumours of the corpus striatum and optic thalamus are accompanied by the following symptoms: hemiplegia, partial or complete, on the side opposite the tumour, and convulsions; common sensation and the special senses are not frequently affected, and the mind is not often impaired.

In tumour involving the crura cerebri, lesions of sensation and paralysis

of the face and of the limbs on the opposite side, giddiness, and paralysis of the motor oculi have been observed.

In tumour of the pituitary gland, the symptoms are frontal headache, amaurosis, first in one eye, then extending to the other. The mental powers are generally unimpaired, and there are no alterations of speech, sensation, or motion. In a case which has been brought to my notice, non-saccharine diuresis and epileptic convulsions were prominent symptoms.

The symptoms are more complex in tumour of the pons. We find here crossed paralysis; face paralyzed on the same, and limbs on the opposite side; pain or anæsthesia in the paralyzed parts; disorders of the special senses; dysphagia, and mental derangement. Convulsions are so uncommon in tumours of the pons, that Ladame lays down the following rule: "If a tumour has attained sufficient size to allow of its presence being diagnosticated, and if convulsions be present, the probability is that the seat of the tumour is not in the pons Varolii." He also considers, and no doubt justly, that the simultaneous affection of several of the organs of sense is indicative of tumour of the pons.

In tumours of the medulla oblongata, pains in the limbs, anæsthesia, convulsions, and sometimes partial or complete paraplegia, giddiness, vomiting, staggering gait, pains in lower extremities, amaurosis, dulness of intellect, hallucinations, delirium, &c., have been observed.

The following symptoms have been noted in tumour of the cerebellum: occipital headache, convulsive attacks, defect in the power of co-ordination, whence walking and standing are difficult or impossible, convergent strabismus, amaurosis; usually no disturbances of sensation except headache; no paralysis; no lesions of speech; no mental derangement. Mental derangement, however, does occur sometimes in case of tumour of the cerebellum, as a result of the changes in the circulation of the brain produced by the irritation of the new growth.

I might have gone with some particularity into the different varieties of tumours which grow within the cranium, but this inquiry would hardly be pertinent to the object which I have had in view—to present the clinical relations of cerebral tumours.

ART. III.—*On the Action of the Hyposulphite of Soda in Intermittents.* By C. H. CHUBB, M. D., Cambridge, Md.

THE hyposulphite of soda, having recently obtained some reputation as a remedy in malarial diseases, I was led to make a trial of it in a number of cases, with the following results:—

Of twenty-seven cases in which the remedy was administered, the paroxysms were arrested in twenty-five; in eleven of these the arrest was immediate, no paroxysm occurring after the treatment was instituted.

These cases were nearly all of the tertian type. In nine cases, one paroxysm, and in the remaining five, two or more paroxysms occurred after the use of the remedy was commenced. These cases were mostly quotidians or double tertians, and the recurring paroxysms were invariably of mitigated severity. In no case was the remedy continued longer than a week, unless there was manifest improvement. In five of the cases relapses occurred; in three of these the disease was again arrested by the same remedy, and did not return, the treatment having been continued some time after the arrest of the chills; in the other two of the relapsing cases, sulphate of quinia was resorted to, to complete the cure. The subject of one of these cases was a child four years of age; the other case occurred in a tuberculous subject, where a hectic condition obtained, and in which several relapses have since occurred, notwithstanding the administration of quinia, iron, and cod-liver oil.

One of the cases cured is worthy of special notice. The patient, a female, æt. 36, had been the victim of ague for twelve months, during which, although drugged to excess with quinia, iron, &c., she had never passed more than two weeks without a recurrence of the chills. Her general health was much impaired. She took the hyposulphite in doses of fifteen grains every two hours, and had but one paroxysm after the treatment was instituted. Her subsequent improvement was rapid and uniform. She has had no relapse since her first recovery, which took place more than six months ago.

Two of the twenty-seven cases are recorded as failures; in one of these, however, the failure was not complete. The treatment was continued for a week, the paroxysms recurring each day; though during the treatment their severity greatly diminished.[1] This patient, a female, suffered from griping pains in the bowels, and frequent watery discharges, which she attributed to the remedy; and it is to be remarked that another member of the same family had been similarly affected while under its use. Under these circumstances the hyposulphite was discontinued, and the cure completed with sulphate of quinia. The intestinal disturbance ceased upon the withdrawal of the sulphite.

In the other case, an unmitigated failure must be admitted. The patient was a robust man, æt. 45, who, favourably for the experiment, entertained strong prejudices against the use of quinia. With a zeal truly commendable, he took the new remedy in doses of from fifteen to twenty grains every two hours for a week, assuring me each day that the severity of the paroxysm was greatly diminished; but an increasingly haggard countenance and jaundiced skin, with the delirium which succeeded each chill, warned me to desist from a further prosecution of the experiment. In this, as well as the preceding case, the disease was at once cut short by the ordi-

[1] In weighing the significance of this fact, the natural tendency of the paroxysms to become less and less marked must be borne in mind.

nary treatment, showing that they were not, in themselves, cases of unusual obstinacy.

In addition to the cases above recorded, I have administered the remedy in a number of others, of which no record was kept. In some of them the treatment was not faithfully carried out by the patients. The conclusions at which I have arrived are, that the hyposulphites constitute a valuable addition to our resources in the treatment of malarial diseases, but that, in the majority of instances, they are less prompt than the preparations of cinchona. I consider them most appropriate in cases which resist the action of sulphate of quinia, or in which that remedy is contraindicated; but I should hesitate to rely upon them in grave forms of pernicious remittent. In these cases the patient can be almost certainly rescued from jeopardy only by the speedy and energetic administration of sulphate of quinia, a reliable substitute for which has, in my opinion, yet to be produced.

Since writing the above I have noticed, in the last number of this Journal (Jan. 1868), additional testimony in favour of the new remedy. Besides the reports from Dr. T. Leavitt and Dr. W. H. Baxter, which appeared some months since, we have still stronger testimony from Dr. S. E. Hampton (*Cincinnati Lanc. and Obs.*), and from Dr. W. E. Turner, of Leavenworth, the former reporting 66, and the latter 125 cases. These gentlemen, with more ample experience than my own, have obtained results more entirely satisfactory than the foregoing. I will only say, that in arriving at the conclusions above stated, I have borne in mind what appears to me to be an important consideration, viz., that in the treatment of intermittents, a remedy must act with some degree of promptness, in order that we may decide correctly as to the share which the medication may have in effecting a cure; for, as Dr. Flint observes upon this subject, the disease tends intrinsically to end, after a few paroxysms, in a certain proportion of cases.

My experiments have been confined entirely to the hyposulphite of soda, the corresponding salt of magnesia, which has been specially recommended, not having been at hand.

ART. IV.—*Description of a New Splint, applicable to certain Deformities of the Extremities; also of a Modification of the Grooved Director, useful in the Cutting Operation for the Relief of Anal Fistula.* By HERBERT M. HOWE, M. D., formerly Resident Surgeon to the Episcopal Hospital, Philadelphia. (With three wood-cuts.)

EVERY new mechanical appliance, and each modification of one already in use, may find certain cases to which it is especially applicable; it may, therefore, not be amiss to notice two instruments which have been found

to possess decided advantage in the few cases in which I have had the opportunity of using them.

In the spring of 1866, during my service in the surgical wards of the Episcopal Hospital as resident physician, Otis K., æt. 11 years, was admitted, suffering from false anchylosis of the knee-joint, with considerable flexion of the leg upon the thigh, rendering the limb very imperfect as an organ of locomotion. This condition was owing to contraction of the skin and deeper structures in the popliteal space, following inflammation of the part, which had advanced to the formation of several abscesses. Cicatrices marking the positions of previous ulceration covered most of the popliteal space. Subcutaneous incisions were made loosening the parts which appeared to be the most firmly bound down, after which the leg was put on Stromeyer's splint. No visible improvement followed this procedure, and the boy's general condition, which, up to this time, had greatly improved under the use of tonics and exercise, seemed to suffer from the confinement incident upon the treatment adopted. Extension made by a weight, applied by broad strips of adhesive plaster, as in certain cases of fracture, was also tried, but the result was nugatory.

It seemed very desirable that the boy should have an apparatus which, while it made easy and constant pressure in the proper direction, should not interfere with exercise and some slight motion of the part. To fulfil this indication, I procured some well-seasoned, straight-grained hickory, and cut out of it two round sticks, about one-fourth of an inch in diameter, and long enough to extend from about an inch below the perinæum to an inch from the bottom of the foot. Fastening to these pieces of sheep's skin, in a manner that will be seen in the accompanying cuts, (Figs. 1 and 2), the instrument was ready for application.

Fig. 1.

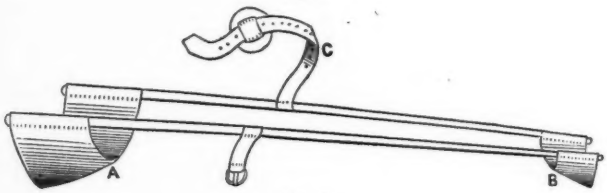
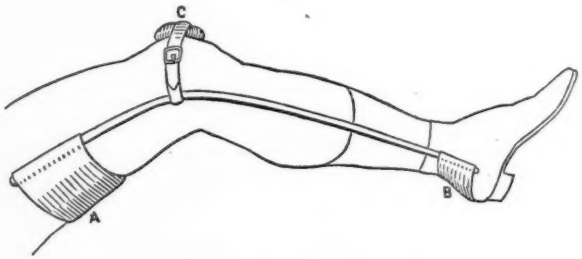


Fig. 2.



Having placed the patient on a bed, the affected limb was raised, and the broad leather band A was put upon the ham, and B enveloped the

back portion of the heel. The leather bands had been so cut that they fitted the parts to which they were applied accurately, thereby avoiding any subsequent displacement of the apparatus. Now, by bringing the strap c over a pad which had been made to fit the patella, and passing it through the buckle which is attached to the other hickory rod, traction was made, which bent the shafts and made them correspond more nearly to the angular condition of the limb, while, at the same time, the force employed tended to straighten the leg. The springs were drawn up sufficiently to make firm pressure, but just short of causing pain. This being accomplished, the boy's pantaloons could be put on, and he be allowed to run about as he chose.

It will be noticed that this apparatus retains itself in proper position, and that this is accomplished without having the limb encircled by a band at any one place, by avoiding which the circulation in the affected part is left unimpeded. This, I conceive, is a very important feature in an instrument having for its object such an influence upon the limb as will render it again useful as an organ of locomotion. Its previous inactivity has caused, in a measure, imperfect nutrition; and if, in the treatment, bandages, or any apparatus that would constrict the free circulation in the part should be used, this would tend to prolong one of the causes that keep up its morbid condition.

By the use of the splint above described, the limb regularly became straighter, and motion in the knee increased. At the time he left the hospital, he could walk (with the splint on) with so little limping, that it was imperceptible, except upon close observation. To complete recovery, however, it was necessary that he should wear some such apparatus for a considerable time after leaving the hospital. His parents soon realized this, for in less than two weeks after his discharge, his father came to the hospital and desired to borrow my splint as a model from which to have another made. I took the matter in hand, and directed Mr. Gemrig to make one after the same plan, substituting small steel rods for the hickory sticks. It seemed to fulfil every indication; and upon subsequently seeing Otis, I found that his limb was very nearly straight, and that the knee-joint had considerable motion; he could walk long distances without fatigue; in fact, his condition was in every way satisfactory.

Next, I will notice a modification of the common grooved director (such an one is found in every physician's pocket case), which has proved especially convenient in the cutting operation for the relief of fistula in ano. I had experienced trouble upon several occasions when operating for this affection, from the irregularity of the fistulous track, rendering it tedious to introduce a probe, and carry it through its entire extent. It was especially annoying, after having successfully passed the probe until its end was felt in the rectum, to withdraw this instrument, and begin, *de novo*, to introduce a director through the same irregular canal. The misfortune of having to do this was doubled if the patient was not under the influence of an anæsthetic, and was again obliged to submit to the pain incident upon the reintroduction of an instrument. In order that advantage might be taken of the probe already being in the fistule, I had a director so constructed that its end might be slipped over the probe and passed upwards until felt in the

rectum. The modification will be readily understood by referring to the cut (Fig. 3).

Fig. 3.

Besides this director, I had two probes made, the flexible one of silver and the other of steel. They were of the same size throughout their whole length, not having the bulbous extremity found on the probe commonly in use. They were of such size as would readily pass through the orifice found at the point of the director. After passing the probe through the anal fistule, and feeling its point on the forefinger previously introduced into the rectum, the hole on the tip of the director has merely to be put upon the end of the probe that is external, and, carefully supporting the other end of it, the director can be speedily pushed upward until it reaches the finger in the gut. Of course it cannot deviate from the canal in which the probe already lies. The probe can now be withdrawn, and the operation completed in the usual manner.

I have used this instrument in three cases, in each of which the operation was accomplished with much expedition. By its employment the necessity for giving ether when operating for anal fistula, is materially diminished. It will be seen that by the modification suggested, the general usefulness of the director is in no way impaired.

PHILADELPHIA, Jan. 10, 1868.

ART. V.—*Four Cases of Angular Osseous Anchylosis of the Knee, Treated by Subcutaneous Intra-Articular Drilling and Disruption.* By S. D. GROSS, M. D., Prof. of Surgery in the Jefferson Medical College, Philadelphia. Reported, with remarks, by S. W. GROSS, M. D., of Philadelphia. (With a wood-cut.)

SYNOSTOSIS, or bony anchylosis of the knee, at a faulty angle, being of comparatively infrequent occurrence, it is not surprising that it has rarely been the subject of operative interference. Many surgeons of eminence, indeed, do not hesitate to express the opinion that operations are unwarrantable where the osseous union is complete; and even go so far as to say that it is not only incurable, but that it admits of no improvement or change in the position of the limb. In other words, no matter how inconvenient, useless, or awkward the limb may be, the sufferer must remain content with his lot.

Louvrier, of Paris, did much to bring attempts to rectify the deformity resulting from angular synostosis into disrepute. With a machine which

was capable of exerting powerful extension, the osseous adhesions were fractured, and, although he met with some success, yet so many failures to effect the object and such lamentable results ensued, as to cause his measure to fall into complete and deserved desuetude. In the hands of Dieffenbach, Langenbeck, Little, and others, forcible manual rupture, combined, if necessary, with subcutaneous division of the hamstring tendons, has been attended with a certain amount of success; but it is evident that such attempts can only be of avail when the inconvenient position is dependent upon partial or recent osseous connections of the articular surfaces. When the synostosis is complete or of long duration, it would be impossible to effect disruption, as efforts at forcible extension would rather result in fracture of the femur above the condyles, or in separation of the lower epiphysis of that bone, or of the upper epiphysis of the tibia in impubic subjects.

Leaving out of consideration, then, forcible fracture of the media of union of the surfaces of the articulation, as being both dangerous to life and inadequate to the relief of complete angular synostosis, it will be found that certain operations have been devised and practised, the results of which clearly show that the deformity is remediable, and this without excessive risk to life and limb. The earliest, most ingenious, and notable of these is that of Dr. J. Rhea Barton, of this city, which consists in excising a cuneiform piece of the shaft of the femur, above the condyles, not including its entire diameter, and fracturing the undivided portion of the bone, after which the limb is gradually brought into an almost straight position, in which it is permanently fixed until union is effected. Dr. Barton's operation, which succeeded perfectly, was executed in 1835, and his practice has been imitated in this country by Gibson, Burr, Mütter, Pancoast, Pope, and J. Mason Warren, and by Bruns, of Tübingen, and Ried, of Jena, the latter as well as Mütter having had three cases. Of these thirteen operations only two terminated fatally, the patient of Pancoast and one of Ried's dying respectively of hectic irritation and exhaustion.

In 1844, Dr. Gurdon Buck, of New York, in a case of complete synostosis of the knee with the limb at a right angle, so modified and extended the procedure of Dr. Barton as to remove the condyles of the femur, the head of the tibia, and the patella, in a wedge-shaped piece, whereby the limb was adjusted in almost a straight position. The patient, a male twenty-two years old, suffered from some subsequent inflammation and suppuration; but at the expiration of six months returned to his home, the bony union at the knee being firm, and the limb shortened five inches, the difference in the length of the two extremities being compensated for by a suitable boot. The excision of a cuneiform piece of bone from the anchylosed joint has also been practised by Post, Mütter, and J. Mason Warren, of this country; by Christopher Heath, of London; by Heuser, of Hombrechtiken, Switzerland; and by Langenbeck and Bruns, of Germany. The patients of Bruns and Warren died of pyæmia, while the remaining six recovered with more or less shortened limbs.

It will thus be perceived that of twenty-one cases of excision of a wedge of bone either from or above the joint, only four proved fatal, thereby affording a percentage of mortality of 19.14. The procedure is, therefore, by no means free from risks, four patients subjected to it having died, and several others having been placed in a critical condition. The original operation of Dr. Barton is beyond all doubt preferable to that of Dr. Buck, since, although greater symmetry may possibly be gained by excising a wedge-shaped portion of the joint, the resulting shortening of the limb has been much less, and the recovery not nearly so tedious. The mortality of the procedure is, moreover, in favour of it by ten per cent. It must not, however, be forgotten that the popliteal artery is endangered in Barton's operation by being pricked by a sharp point of the fractured bone. In the first case of Professor Ried, the femoral artery had to be taken up on account of hemorrhage on the thirteenth day. In spite of this complication the patient recovered with an excellent limb at the expiration of seven months. The best result obtained from Buck's operation was in the case of Heuser. Firm bony union had taken place in ten weeks, and the man was afterwards able to employ himself in chamois hunting.

In the winter of 1859 Professor Pancoast had at the clinic of the Jefferson Medical College a youth suffering from complete synostosis of the knee, in whom efforts at extension had previously been fruitlessly employed. Through a single opening the lower end of the femur, just above the condyles, was perforated subcutaneously at half a dozen points by means of a stout gimlet. Having thus succeeded in weakening the bone, he was enabled to break it forcibly, and bring the limb at a proper angle for future usefulness. An abscess formed at the seat of the fracture during the progress of the after-treatment; but, with this exception, no untoward symptoms occurred, and the patient left the hospital with a good limb.

The credit of having proposed the above operation as a substitute for that of Dr. Barton is due to the late Prof. Brainard, of Chicago, who first directed attention to it in his "Essay on a New Method of Treating Ununited Fractures and certain Deformities of the Osseous System," to which a prize was awarded by the American Medical Association in 1854. He did not, however, have an opportunity of applying subcutaneous drilling and fracture of the femur for the relief of true anchylosis of the knee until one year after the operation of Dr. Pancoast, and, in this case, the condyles were the seat of the perforations. The patient, a young man, twenty-three years of age, recovered with a good limb. Dr. Agnew, of this city, has practised subcutaneous drilling and fracture of the femur for the relief of synostosis of the knee at a right angle, in two cases, one of which recovered with a useful limb, without a bad symptom. In his first case, after union was apparently perfect, erysipelas and diffuse suppuration set in, by which the lad's life was imperilled, and the cure much protracted. The procedure of Dr. Brainard being subcutaneous, it should, on theoretical

grounds, give better results, so far as life is concerned, than that of Barton or Buck; but more extended experience is required before it can be pronounced to be as expedient in practice as feasible in theory.

In 1859 Prof. Brainard extended subcutaneous perforation to the joint itself in the case of a young lady, seventeen years of age, in whom false anchylosis was combined with partial osseous union of the patella with the external condyle. The perforator was used as a drill and lever until the patella was detached. A little tenderness and ecchymosis followed this bold and unwarrantable procedure, and the soft adhesions were subsequently ruptured by manual flexion and extension. The limb was then gradually brought straight by means of an extending apparatus.

Another measure for the relief of the deformity resulting from synostosis of the knee, only applicable, however, to impubic subjects, has been suggested by Mr. Barwell, of London, in his *Treatise on Diseases of the Joints*, which appeared in 1861. Of this method, which is denominated epiphysal rupture, and has the merit, at least, of being subcutaneous, the reporter knows nothing, nor is he aware that it has been instituted by other surgeons. The following extract from his work will serve to convey to the reader an idea of Mr. Barwell's estimate of his operation:—

"A few words must be said regarding a mode of procedure advantageously to be adopted in cases of very firm, even true anchylosis, at an inconvenient angle, occurring in impubic persons. In some cases of this sort a wedge-shaped slice has been excised from between the tibia and femur sufficiently thick to allow straightening of the limb. Such operations may, in certain instances, be justifiably performed upon an adult; but I cannot conceive them to be necessary in a person under fourteen years of age. The epiphysis of the tibia, which has not yet united, should be in such cases broken through, and the leg be brought into the same line with the thigh. The upper truncated end of the diaphysis will then rest against the angular end of the epiphysal end, and the limb will only be shortened by little more than an inch. I have never seen any evil result follow such practice; the parts unite firmly and well; the patient gains a useful although a stiff limb. The angle of anchylosis must be very acute to cause this operation to endanger permeability of the popliteal artery; but it is wise to place the splint, which should be applied at once, at the side, not at the back of the limb, and to avoid causing any pressure by the bandage, or otherwise, over the artery."

The operation of subcutaneous drilling and disruption of the osseous bonds, aided, when the adhesions are sufficiently weakened, by forcible manual extension, through which the undivided portions of the new bone are fractured, about to be described in the following cases, is not new in principle, although it does not appear to have been put in practice until the autumn of 1861, when Professor Gross performed it at the clinic of the Jefferson Medical College. M. Malgaigne, in his *Médecine Opératoire*, 1842, suggests, as a substitute for Barton's operation, breaking down subcutaneously the anchylosed joint by chisel and mallet, but adds that he

should not like to have recourse to it unless in a very urgent case. Dr. Little, of London, in his brochure on *Anchylosis or Stiff-Joint*, published in 1843, remarks that Professor Dieffenbach, of Berlin, had proposed the same operation; but the reporter is unable to find that either of these eminent surgeons submitted their suggestion to the proof. The late Prof. Brainard was probably the first to enter the knee-joint with an instrument for the purpose of relieving bony union; but his case, as briefly described above, was one of false anchylosis along with partial osseous adhesion of the patella to the condyle. Luckily for the patient, the measure was a success, and was followed by no untoward symptoms, as might naturally have been anticipated where so large a joint is subjected to interference. The articulation not having been obliterated by bony union, dangerous consequences might have resulted, and it should not be imitated.

The procedure instituted by Professor Gross is merely an extension of that of Dr. Brainard, with the very important difference that it was applied to joints in which complete osseous consolidation had been effected, and which, consequently, were perfectly tolerant of rough interference. In these cases, the synovial membrane and cartilages were destroyed, and the articulation had become a continuity of bone. Under ordinary circumstances, where the bond of union is soft, or the anchylosis false, and the least particle of motion is preserved, such rude procedure, as the one now to be described, would be attended with great risks, if not productive of fatal results, and could not be too strongly condemned.

CASE I. Henry M., twenty-two years of age, presented himself at the clinic of the Jefferson Medical College, on the 30th of October, 1861, on account of bony anchylosis of the left knee, the leg being flexed at nearly a right angle with the thigh. Nine years previously, while mowing, he accidentally opened the joint with a scythe, and the injury was followed by violent inflammation and constitutional disturbance. During his prolonged confinement, the limb was unfortunately placed in a bent position, in which it became stiffened, compelling him to use a crutch. There was no deformity of the joint, and a scar marked the site of the original wound.

The diagnosis was synostosis of the knee, and was based on the following points: absolute immobility succeeding traumatic inflammation; a fixed state of the patella; a sensation to the touch of thorough consolidation of the articulation; no tension nor resistance of the flexor muscles on attempts at forcible extension; and freedom from pain both in front of and behind the joint during similar efforts.

The nature and perils of the operation proposed for the relief of the deformity having been fully explained to the patient, and his entire consent having been gained, Professor Gross proceeded as follows: Chloroform having been administered, a longitudinal incision, hardly one-half of an inch in length, was made over the outer surface of the knee, near its middle, in a line with the groove between the head of the tibia and the external condyle, down to the two bones. Through this opening a steel perforator was introduced, keeping it as nearly as possible in the direction of the line of the articulation, and passing it on to the opposite side until the point could be felt beneath the integuments. The instrument was now moved

about in such a manner as to cut through and break down the osseous adhesions between the femur and the tibia on the one hand, and the femur and patella on the other. The union between the bones was exceedingly firm; but, after much difficulty, they were finally overcome, and, by forcible extension of the limb, the parts yielded with a cracking noise. The small wound was carefully closed with two twisted sutures and strips of collodion plaster, confined by a compress and a roller carried from the toes to the middle of the thigh. The leg was brought to an angle of about 45° with the thigh, and laid in an easy position upon its outer surface, a thick pillow being placed behind the knee. No blood was lost in the operation, and, as the patient was fully chloroformized, not a particle of pain was experienced. Half a grain of morphia was given as soon as the effects of the anæsthetic had passed off, and recumbency, light diet, and cooling drinks enjoined.

No constitutional disturbance followed the procedure; the entire immunity from suffering being doubtless due to the fact that the natural structures of the joint had been completely destroyed. For four days the limb was allowed to remain perfectly quiescent, when an extending apparatus was applied, and the limb was straightened daily several degrees. At the expiration of three weeks the patient was allowed to go about on crutches; the dressings having been removed on the tenth day, when the wound was found to be perfectly united, and the pins were removed. In the sixth week the man was discharged well. At this time, the ruptured surfaces were thoroughly consolidated, the knee being very slightly flexed, and the limb shortened one inch, it having been deemed an advantage in progression to have some shortening of the affected member.

CASE II.—A young lady, twenty-five years of age, consulted Professor Gross, in May, 1866, on account of complete osseous anchylosis of the right knee, caused by an injury received in jumping rope sixteen years previously. The joint was enlarged from dropsical swelling, and, at times, intensely painful for the next four years, when the spine became so seriously affected as to absorb all her other suffering. The disease of the spine was seated in the dorsal vertebræ, and was evidently of a strumous nature. It was followed by a considerable degree of posterior angular curvature.

Until the age of sixteen, although the inflammation of the joint had subsided, she was unable to bear any weight upon the limb. The knee was completely stiff, and the leg was bent at nearly a right angle with the thigh, the foot being eight inches from the ground as she stood up. The muscles of the calf were considerably wasted, and the temperature of the limb was less than in the normal state. The gait was very awkward, and progression difficult and fatiguing. The general health was good.

Under chloroform, an incision, one-third of an inch in length, was made over the inner surface of the knee, and the operation conducted as in the preceding case. The disruption of the osseous tissue with the perforator being, however, slow and difficult, the instrument was withdrawn, and a narrow, sharp-pointed chisel substituted, with which the desired object was gradually effected. The puncture was hermetically sealed as before, and the position of the limb after the operation was the same as in the first case.

Some traumatic fever ensued, but it was very slight, and speedily disappeared under a mild aperient administered the morning after the operation. The diet was light, and the drinks were cooling. The joint was tender for several days, and when the dressings were removed at the end of a fortnight a little pus was found upon the wound, the edges of which were thoroughly united. The young lady went home a week later, walking

with the aid of crutches; the knee, still a little tender and swollen, was washed twice daily with warm water and castile soap, and then well rubbed with a sorbefacient liniment, a bandage being used in the interval. At the end of four months progression was performed without artificial assistance, a privilege denied for sixteen years.

A letter received from this young lady, January 5, 1868, says: "The limb is well and strong, and lacks only one inch of being as long as the other. There is no motion at the knee, but I have become so accustomed to it that it seems to me I have no use for a joint. I can easily walk two miles on a stretch."

CASE III.—Joseph Z., twenty-two years of age, was admitted into the hospital of the Jefferson Medical College, in October, 1866, with synostosis of the left knee, the leg being flexed at such an angle with the thigh that the distance between the heel and the corresponding buttock was only seven and a half inches. The integuments over the lateral and anterior portions of the articulation were much scarred, indurated, and immovable, and presented the cicatrices of old sinuses. The hamstring tendons were contracted, and very prominent. The general health was not good; he was emaciated; his complexion was sallow; and he occasionally suffered from attacks of malarial fever.

His own account of the injury was as follows: While serving as a marine in the U. S. Navy, at Fort Fisher, January 18, 1865, he was wounded in the left knee by a grape-shot, which struck him when lying down, near the inner condyle of the femur, and passed through the articulation. He was sent to the Portsmouth Naval Hospital, whence he was discharged on the succeeding 28th of June, with the knee perfectly stiff and bent at the angle above described. Afterward, there was a constant discharge, and, from time to time, pieces of bone came away, the last making its exit in June, 1866. The sinuses then closed, and he applied to Professor Gross in August for the relief of the deformity, the limb being not only useless, but a positive incumbrance.

Chloroform having been administered, the tense and contracted tendons of the hamstring muscles, along with several bands of thickened fascia, were divided subcutaneously as a preliminary measure, then the adhesions between the articular surfaces of the bones of the joint were broken up with the perforators. The dressings and the position of the limb after the operation were similar to those employed in the preceding instances.

For ten days the patient progressed in the most satisfactory manner, when violent traumatic fever, with profuse suppuration of the joint, ensued. Several of the old scars opened, and for three weeks his condition was somewhat critical. The limb was maintained in an easy position on pillows, and fomented with lead water and laudanum, while iron, quinia, morphia, and whiskey, were freely administered internally. All inflammatory symptoms having subsided, the extending apparatus was applied, and about ten weeks after the operation, the knee was straightened sufficiently to enable him to rest on the ball of the foot, which was all that could be desired. The heel was elevated nearly two inches; but it was proposed to remedy this by division of the tendo-Achillis, to which, however, the man would not consent. He walked readily with the aid of a cane, and there was a very slight degree of motion perceptible at the knee.

A letter received from Dr. C. L. Duffell, January 29th, 1868, says:—

"I saw your patient, Joseph Z., last evening. The knee is firm. The heel has come down so that, when the ball of the foot is on the ground, it is elevated

an inch, about enough I suppose to allow for the angle of the knee. I do not perceive any unusual amount of rigidity of the tendo-Achillis. The young man worked on a farm all last fall, performing the usual labours pertaining to that occupation; but he is now teaching school, and walks as much as four miles every day, without difficulty at the time or inconvenience subsequently."

CASE IV.—William K., twelve years of age, was admitted into the hospital of the Jefferson Medical College, in October, 1867, on account of bony anchylosis of the left knee, with the limb at a right angle. In the winter of 1865, the joint was injured by a fall on the ice, and became the seat of intense inflammation, followed by suppuration and destruction of the normal textures. The hamstring muscles were much contracted, their tendons being very tense and prominent, and there was a large number of scars on both sides of the articulation. The integuments had lost their elasticity, and were firmly adherent to the subjacent parts. The femur, tibia, and patella, were completely fixed; the joint was immovable and misshapen, and presented somewhat the appearance of posterior subluxation. All traces of inflammatory action had disappeared.

On the 30th of October, the boy having been placed under the influence of chloroform, the hamstring tendons and some bands of resisting fascia were divided subcutaneously; the bony adhesions broken up by means of a perforator and a chisel inserted through a small incision on the outer side of the joint, and the parts then liberated by forcible manual extension. Two twisted sutures were introduced, and the opening hermetically sealed by strips of lint saturated with collodion, after which a roller was lightly applied from the toes to the middle of the thigh, and the limb placed on pillows in an easy position.

At the expiration of one week, the report states: "Beyond a slight evanescent sympathetic fever, there has been no trouble whatever. He has taken a little citrate of magnesia, and been kept on light diet. His appetite is excellent, and he sleeps well. The collodion dressing is still firmly adherent; but no efforts have been made to extend the limb, from the failure of the instrument-maker to furnish the proper apparatus." On the eleventh day, the extending splint was applied, and the leg gradually brought down to a proper position. On the 7th of December, when the lad returned home, the knee was nearly straight, and he walked with the support of one crutch. A very slight degree of lateral motion was perceptible; but the union was firm on the 2d of February, 1868, when he moved about without artificial support.

An examination of the preceding cases will show that in all the anchylosis was osseous throughout, and that inflammatory action had entirely ceased. Under opposite circumstances, the operation would not be justifiable, since a lethal inflammation would, in all probability, be excited. It is, therefore, of the last importance that the surgeon should convince himself of the form of anchylosis with which he has to deal, before he proceeds to undertake the operation.

The most valuable signs of synostosis are flexion, complete immobility, and freedom from pain, under rough attempts to move the articulation. Immobility, of itself, is of little importance as a diagnostic aid, since it may be just as great in false as in true anchylosis; but chloroform affords the greatest assistance in arriving at a correct conclusion. In the former

event, a joint which was firmly fixed, yields and admits of some degree of motion; whereas, when the anchylosis is osseous, the articulation is as inflexible under chloroform as when examined without that agent. In false anchylosis, moreover, when there is any degree of mobility, the patient experiences much pain on attempts at extension, and there is more or less resistance of the opposing muscles, as evinced by their tension and rigidity. When, on the other hand, the anchylosis is bony, rough handling is borne without flinching, and the muscles are perfectly passive. Finally, when traumatic inflammation has preceded complete loss of motion, particularly if the latter be of long standing, it may safely be assumed that osseous anchylosis exists, and this conclusion will be strengthened if the joint is comparatively little swollen, and conveys to the touch the sensation of consolidation throughout.

The general health of the patient at the time of operation is a matter of paramount importance, as it exerts a powerful influence upon the result. This is well shown in Case III., where the subject of the procedure was sallow and emaciated, and suffered from malarial fever contracted in the U. S. Navy. Severe local inflammation and traumatic fever set in on the tenth day, and, for three weeks, his condition was somewhat critical. Under appropriate measures, however, he ultimately recovered with an excellent limb. In Case II., the patient was of a scrofulous habit, and her system was somewhat debilitated by long confinement. The resulting constitutional irritation was extremely slight and evanescent, and the joint was merely a little swollen and tender for several weeks. These symptoms could only be referred to the presumed fact that the synostosis was not complete; but there was no escape of synovia to indicate that such was really the case.

The mode of conducting the operation is sufficiently apparent from the details given in the first case; but it must be borne in mind that the interior of the obliterated articulation is to be reached by introducing the perforator in a line with the natural interspace between the head of the tibia and either condyle, as may be most convenient. The connections of the patella with the femur and tibia are readily broken down and its disjunction greatly aided by using the instrument as a lever, through which it may be forcibly elevated. To avoid as much as possible the contact of the air with the osseous wound, the small incision must be closed hermetically by two twisted sutures and strips of lint saturated with collodion. The pins are permitted to remain until the dressings have become completely loose, when the wound will be found to be united.

The perforator, or drill, with which the operation is conducted is represented, greatly reduced, in the subjoined cut, kindly furnished by the skilful cutler, Mr. Gemrig, of this city. It consists of a shaft of well-tempered steel, four inches and a half in length, the point of which is one-sixth of an inch in breadth, and presents on each side an oblique groove with cutting edges, so that it acts as a drill and a gouge. This is fitted into a firm or a movable handle, its proximal extremity being large and rounded, so as

to rest comfortably in the palm of the hand. This instrument is employed by cutlers to drill ebony, and will usually be found to answer admirably for breaking down and cutting through bony anchylosis. In some cases, however, it may advantageously be replaced by a chisel, three lines broad, the point of which is bevelled and slightly blunted. Whatever form of instrument be used, great caution must be exercised in operating on the posterior surface of the joint, lest it slip and injure the popliteal artery. Although this accident has not occurred, it is well for the surgeon to remember that the vessel is endangered by a careless use of the perforator.

In two of the cases here reported, the inner and outer hamstring tendons, along with some bands of fascia, were so much contracted that their subcutaneous division was imperatively required, as a preliminary measure. This operation should not, however, be executed unless the condition of these structures demands it.

The management and position of the limb after the operation call for brief notice. A roller having been applied from the toes to the middle of the thigh, the limb is supported by pillows in an easy position on its outer surface. At the expiration of four or five days, when the small punctures made by the tenotome may be expected to have closed, provided neither traumatic fever nor local difficulty has disclosed itself, an adjusting apparatus, on the principle of McIntyre's splint, is applied to the posterior surface of the thigh, knee, and leg, by means of which the limb is extended daily several degrees, until it is brought at the proper angle for future usefulness. Through gradual extension, the muscles, fasciæ, nerves, bloodvessels, and lymphatics, the positions and relations of which have necessarily become altered by the malposture of the limb, are not subjected to the hazards of immoderate stretching or rupture, as might occur if the extremity were at once brought nearly straight. When the anchylosis is of long standing, this precaution cannot be too rigidly enforced; whereas, in recent cases, extension may be conducted more rapidly, or, when practicable, the knee may be brought to a proper angle at once.

The aim of the surgeon should invariably be to procure firm bony union and such a position of the limb as shall secure the greatest amount of usefulness when the recovery has been perfected. When one knee is stiff, it is a very decided advantage in progression to have some shortening of the affected extremity; hence the knee should be brought at such an angle that the shortening will amount to about, but not more than, one inch when the patient stands erect. This was effected in all of the cases here detailed.

The procedure of Professor Gross was practised by Dr. F. F. Maury, at the Philadelphia Hospital, in May, 1867. The patient, a man thirty-seven years of age, had received at the battle of Chancellorsville, three years

previously, a shell wound of the right tibia, which involved its tubercle. Synostosis of the knee, with the leg flexed at nearly a right angle, ensued, for the relief of which Dr. Maury broke down the adhesions by means of the perforator and chisel, tenotomy and forcible efforts at extension having previously failed. At the expiration of three months, the man had recovered with an excellent limb.

The results of this mode of treatment are of the most satisfactory nature, all of the five patients subjected to it having recovered with a useful limb. In the first case, the man was able to be about on crutches at the end of three weeks, and to walk without artificial aid in three weeks more. In the second, crutches were used at precisely the same date, but the young lady was unable to move about without their assistance until the expiration of four months. In the third case, the patient was on crutches in five weeks, and walked without them in ten weeks; and in the fourth, crutches were used in a fortnight, and the lad dispensed with them entirely in seven weeks. In the case of Dr. Maury, dates upon these points are wanting. The mean duration of confinement in bed was, therefore, twenty-three days, and the average length of time at which the patient was able to walk without artificial aid, ten weeks. It will thus be perceived that the duration of treatment was no longer than that required for the cure of a simple fracture of the thigh.

Subcutaneous perforation and disruption of angular synostosis of the knee, for the relief of the deformity arising from it, is, for the following reasons, recommended as a substitute for all other operations:—

1. Being a subcutaneous procedure, it is, on that account, far less hazardous than the operations of Barton and Buck, which are a species of compound fracture, and, therefore, liable to all the dangers and accidents which attend that injury.

2. The shortening is far less than that resulting from any of the other methods of cure, this, indeed, being entirely dependent upon the pleasure of the surgeon. Shortening of one inch is, however, advised, since it renders locomotion less awkward.

3. It occasions no unsightly deformity at the knee itself, beyond flexion at a very slight angle. Both Brainard's and Barton's operations, more particularly the latter, are attended with an ugly deformity, from the knee being rendered unusually prominent by bending the limb at the point of fracture of the femur. Although Buck's procedure leaves a more symmetrical limb than either of these methods, this advantage is counterbalanced by the protracted sufferings, undue shortening, and greater mortality resulting from it.

4. The duration of treatment is much shorter, thereby subjecting the patients to less inconvenience and annoyance from prolonged confinement in the recumbent posture.

5. The object of the operation being to break down and weaken the osseous bands in such a manner as to permit them to be fractured with a

moderate degree of force, the popliteal artery is not endangered. In one of the cases by the method of Barton, the femoral artery had to be taken up on the thirteenth day, on account of bleeding from the popliteal, which had been injured by a sharp point of bone.

The reporter has thus referred to twenty-six cases, and given the details of four, of synostosis of the knee at a faulty angle, relieved by surgical interference. Four only of the entire thirty were fatal, thereby affording a mortality of 13.33 per cent., and showing, contrary to the assertions of some eminent surgeons, that such a condition is remediable without great risk to life. When it is remembered that angular osseous anchylosis is always awkward and annoying, and renders the limb useless and often so much of an encumbrance as to demand from the patient a so-called "amputation de complaisance," than which no operation is more lethal, this death-rate cannot be considered excessive.

Of these 30 operations, 13 were performed after the method of Barton, of which 2, or 13.58 per cent., were mortal; 8 were practised after the method of Buck, and of these 2, or 25 per cent., ended in death; 4 were of the nature devised by Brainard, all of which were successes; and 5 were after the method described in this paper, all of which likewise recovered. The first twenty-one, partaking, as they did, of the nature of compound fractures, alone furnished the mortality, thereby affording additional evidence of the superiority and comparative innocuousness of subcutaneous operations.

PHILADELPHIA, February 4, 1868.

ART. VI.—*On the Parasitic Forms Developed in Parent Epithelial Cells of the Urinary and Genital Organs, and in their Secretions.* By J. H. SALISBURY, M. D. (With thirty-four illustrations.)

THE parent epithelial cells, lining the genital and urinary organs, under certain conditions, afford a fertile soil for the development and propagation of some low cryptogamic forms; and in the secretions of these parts there are occasionally found, multiplying rapidly, animal organisms of inferior types. These parasites all produce more or less irritation, deranging the physiological functions of the parent cell. Hence there is, not only excessive cell activity and secretion; but the resulting products are pathological in quantity and kind, and frequently cell death and disintegration result. The parts become irritated and inflamed with catarrhal discharge; and frequently thickened and indurated. The induration of the womb, when considerable, may sometimes be mistaken for scirrhus. The secretions are for the most part free from offensive odour; but thick, translucent, and gelatinous. They are composed of detached parent epithelial cells, and pathological mucus. In the parent epithelial and mucous cells,

and in the fluid part of the secretions, are found developing in greater or less numbers fungoid and algoid spores, and frequently embryonic filaments.

When the spores are numerous in the cells, the nucleus and granules of the normal cell are often entirely absent, being destroyed by the presence of the parasites. This is more especially the case, where the spores exist in the mucous cells (fig. 32). Under the influence of spore development, these cells tend to develop in broad filaments, with the spores arranged irregularly along the cavity (fig. 11).

As the secretions from the womb pass over the external parts, the spores frequently become planted in the cells of the external mucous membrane, where they rapidly develop, producing a most troublesome and often intense pruritus, especially at night; and if the parts be scratched to relieve this, the burning and itching are aggravated.

These parasites, under certain pathological conditions of the secretions, frequently are transplanted and develop in the tender epithelium of the prepuce and glans penis, producing there severe pruritus. The vegetation here produces minute papulæ, surrounded by an inflamed base; the epithelium becomes frequently abraded, and superficial excoriations result. This constitutes one form of balanitis. In certain states of the secretions which favour their growth, these vegetations attack the epithelium of the urethra, producing urethritis, resembling gonorrhœa.

Cryptogamic vegetation is sometimes found developing in the epithelium of the kidneys, ureters, bladder, and urethra. In such states, some forms of these parasites occasionally attack the vulva or prepuce, as the case may be, producing more or less severe and obstinate pruritus, according to the fitness of the secretions of these parts for the growth and propagation of these vegetations. If the epithelium of the urinary and genital organs be healthy, these parasites, most likely, would not become developed, unless planted there with the fermenting secretions from similar surfaces already infected; and even then but seldom. If, however, the system is out of order, and the secretions of these parts abnormal, the spores when planted rapidly multiply.

CRYPTOGAMIC PARASITES. I. *Penicillium pruriosum* (Salisbury).—This is sometimes found developing in and on the epithelium of the womb, bladder, ureters, kidneys, and urethra, and occasionally in and on that of the vulva and prepuce. Its development in these parts always produces more or less irritation. When existing to any extent in the cells of the vulva and prepuce it produces severe *pruritus*. In the latter locality it becomes the cause of one form of balanitis. In a few instances, I have found this vegetation exciting quite severe urethritis. This plant is represented at figs. 1, 2, 3, and 4. Fig. 1, spores. Fig. 2, spores developing in a parent epithelial cell of the bladder. Fig. 3, mycelium of the fungus. Fig. 4, a fertile thread in fruit.

II. *P. glaucum*.—This species is occasionally met with in the urinary

apparatus. I have found it mainly in patients recovering from long-continued attacks of miasmatic fevers. It seems to be developed, more as a consequence of certain diseased states of the secretions, than as a cause of them. So far as I have been able to discover, it produces of itself but little disturbance.

III. *Torulus aggregatus* (Salisbury).—The individual spores of this plant when alone, or arranged in a moniliform manner, resemble the so-called torula cell (*Cryptococcus cerevisiæ*). They present, however, a very different appearance, when multiplying by duplicative segmentation and forming masses as represented at fig. 5. This vegetation is developed in and on the epithelium of the womb, producing a profuse discharge of a thick, ropy mucus; with inflammation, enlargement, and more or less induration of this organ. The spores are developed in the parent epithelial and mucous cells, and in the fluid secretions. In these cases the catarrhal discharge is copious, thick, and often yellowish and greenish. I have only occasionally met with cases of this description.

Fig. 5 represents the spores, multiplying by duplicative segmentation, forming irregular masses or aggregations of spores; fig. 6, the individual spores developing by pullulation, and resembling the spores of the *cryptococcus cerevisiæ;* fig. 7 spores multiplying by duplicative segmentation, and arranging themselves in such a manner as to form broad filaments made up of aggregated spores.

This species sometimes becomes planted in the epithelium of the vulva, where it develops, producing more or less irritation and pruritus.

IV. *Torulus catarrhalis* (Salisbury).—The spores of this plant are frequently found in the mucous and epithelial cells, and fluid secretions of the womb, producing irritation, catarrh, and gradual enlargement and induration of the organ. The catarrhal discharge is thick, ropy, and often profuse. The tough ropiness of the discharge arises from the rapid development of the mucous cells into broad, strong filaments, which become united side to side, forming a tough, gelatinous, translucent mass. The spores of this vegetation are frequently planted in the epithelial cells of the vulva, where they rapidly develop, if the secretions of these parts are in a suitable condition, producing at times a most distressing pruritus. These are transferred or extend from cell to cell along the urethra, spreading to the bladder, ureters, and epithelium of kidneys, where they produce often considerable uneasiness and irritation. They are also sometimes transferred to the cells of the prepuce and urethra of the male, where they may produce one form of balanitis, and a urethritis resembling to some extent gonorrhœa.

The spores of this plant are represented at fig. 8. Fig. 12, spores developed in a parent epithelial cell of the bladder. Fig. 10, spores developing in the mucous cells from the womb. Fig. 11, these cells developing into broad filaments; along the cavity of which are the spores irregularly arranged. Fig. 9, represents an embryonic filament. Fig. 13, the myce-

lium of the fungus, developing from the spore. Fig. 14, a mass of epithelium, scraped from the vulva, in a distressing case of pruritus. It will be seen that the epithelial cells are filled with vegetating spores of the *Torulus catarrhalis*. The lady from whom this specimen was obtained, was suffering with severe catarrh of the womb. The catarrhal discharge contained very many spores of this fungus, and the spores were largely developed in the parent and mucous cells that escaped in the catarrhal discharge. The womb was enlarged, inflamed, and indurated; and the discharge was ropy, gelatinous, and profuse.

The disease yielded quite readily under the influence of free syringing with solution of bi-sulphite of soda morning and evening, after which dilute citrine ointment was applied, and tr. ferri chlorid. given internally in twenty drop doses two hours after each meal.

V. *Botrytis infestans*.—This fungus produces the so-called *potato rot*. It is occasionally found in and on the epithelium of the urinary organs, where its presence and development produce more or less irritation; and the urine contains, in greater or less quantity, the spores (figs. 16 and 17). The forms represented at fig. 16 are characteristic of this vegetation. In the mucous and epithelial cells in the urine, the spores of this plant will be found (fig. 15). In two of my patients, where this plant was largely present, there occurred severe attacks of erysipelas, accompanied and followed by profuse and protracted *hæmaturia*, which in one of the cases continued for over a year after the erysipelas passed away. During the continuance of the hæmaturia, the *B. infestans* was present in the urine. This, with the hemorrhage, gradually disappeared, under the influence of the constant administration of tr. ferri chlorid. The patient is now a strong, stout man, in perfect health. I have met with several cases where this vegetation produced severe pruritus of the urethra and vulva.

VI. *Zymotosis utero-catarrhalis* (Salisbury).—This is found in multitudes in the parent epithelial cells and secretions of the womb, in uterine catarrh. That its rapid development acts as an irritant there can be no doubt; but to what extent it may operate as a cause of the catarrhal inflammation and discharge is not known. The spores and filaments of this plant are represented at fig. 19.

VII. *Z. angularis* (Salisbury).—This is occasionally met with in and on the parent epithelial cells of the urinary organs. Its presence produces considerable irritation of the bladder, often with some little catarrhal discharge. The inside tube of the filament is interrupted at irregular intervals, and at these interruptions the filament frequently is abruptly bent, forming more or less obtuse or acute angles; hence the specific name. When this plant is developed in the urinary apparatus, the filaments are found in the freshly voided urine, either singly or in bundles or knots. The spores and filaments are represented in fig. 18.

VIII. *Z. oscillans* (Salisbury).—This occurs frequently in the parent epithelial cells and mucous secretions of the urinary apparatus; and the

spores and filaments are found in greater or less quantity in the freshly voided urine. The embryonic filaments and spores are usually very active. The young filaments move rapidly in every direction with a vibrating motion, hence the specific name. This plant is represented in figs. 20 and 21. Where it is found largely in the urinary apparatus, there is usually a feeling of weight, an aching or uneasiness in the bladder; with a tired, languid feeling pervading the system. The embryonic filaments are either moniliform or have cross markings at short intervals. In the mature filaments the cross markings are obscure and often imperceptible.

IX. *Z. gracilis* (Salisbury).—This vegetation I have occasionally met with in the urinary organs in Bright's disease. The spores are very minute and the filaments very slender, with interruptions in the inside tube at regular intervals, producing the appearance of cross markings. I do not know that it produces any disturbance by its presence; though the probability is, that it does Whether it acts as a cause or consequence of certain pathological states, is not known. The spores and filaments of this vegetation are represented at fig. 22.

X. *Z. elongatus* (Salisbury).—This I have only occasionally met with in the urinary organs; and when present there has always been more or less distress in retaining and voiding urine. The illustration, representing this plant, was drawn from the freshly voided urine of a Mr. E., of Cleveland, who had been suffering very much in retaining and voiding urine for the last twelve years. He had been repeatedly sounded for stone, but none found, and treated for gravel without benefit. This vegetation occurred in large quantity in this patient's urine. With it was a little stelline. The urine was light-coloured and had a density of about 1.020. This plant is represented at fig. 24.

XI. *Z. phosphaticus* (Salisbury).—This occurs quite frequently in phosphatic urine. The filaments are united frequently by a thin film or transparent membrane; which is a characteristic peculiarity. Whether it is a cause or simply the consequence of pathological states, is not known. The spores and filaments are represented at fig. 23.

XII. *Sarcina cystica* (Salisbury).—This may be the same as the *S. ventriculi*, which is found so often in the stomach. It appears to be, however, smaller, and tends to develop by segmentation, more in one direction than in the other, producing rows of cells, that at one end are frequently bent (fig. 33); on account of this apparent difference I have given it the specific name, *cystica*. I have found this plant in quite a number of cases in the urinary apparatus. Its presence seems to produce more or less irritation. It is represented at fig. 33.

XIII. *Spharrotheca pyra* (Salisbury). — This plant, which produces the blight in the apple, pear, and quince trees, and the rot in their fruit, is occasionally met with in the urinary organs. I have not been able to discover that it produces much disturbance. Its presence and propagation

in these parts is probably more a consequence than a cause of certain pathological states.

XIV. *Crypta irregularis* (Salisbury).—This is met with in cases of ulceration of the urethra and bladder, arising from severe and long continued venereal disease. The vegetation is voided with the shreds and ropes of muco-pus, that are passed in such cases. It is represented in figs. 25, 26, and 27. Figure 25 represents the spores, and figs. 26 and 27 the filaments.

The filaments are more or less irregular in diameter, having usually somewhere in their course bulbous dilatations. In advanced stages of development, they are quite homogeneous throughout their entire length. In earlier stages of growth, they exhibit transverse markings at tolerably regular intervals (fig. 26). The filaments represented at fig. 26, are from an ulcerated urethra, in a severe case of gonorrhœal inflammation, complicated with a urethral chancroid, where the disease had been allowed to run two weeks without treatment.

The plants, represented in fig. 27, are from a young man who had suffered for several years, almost constantly, with gonorrhœal and chancroid diseases. In both these cases, considerable blood was voided with the pus.

ANIMAL PARASITES. I. *Trichina cystica* (Salisbury).—This is a small species of trichina, which I have found in the human bladder. In all my examinations, I have met with this little entozoon in three cases only. In two of these it was only occasionally met with in the urine. In the other, a Mrs. R., of Cleveland, it occurred in great numbers. Frequently from ten to fifteen ova were found in a single drop of urine. The eggs, containing the animal in various stages of development, are represented at figs. 29 and 30. These are magnified 300 diameters. The animal magnified about 1000 diameters is represented at fig. 31. This patient was an old lady, aged about 65. She had cystinic rheumatism, and was partially paralyzed, and had been insane for several years. She was labouring under severe cystinemia, which was regarded as the main cause of the rheumatism and paralysis. When this patient came into my hands, there was from five to fifteen ova (figs. 29 and 30) in every drop of urine voided. Her urine was passed milky, with granular cystine, and was dense and scanty. There was partial paralysis of the bladder, so that her water was constantly dribbling from her. The surface of the body, and especially the limbs, were covered with purple spots, from one to six lines in diameter. Around the ankles, these spots, some weeks before death, became gangrenous and sloughed, leaving offensive sores. The blood was black and thick, and the pulsations slow and irregular. Heart sounds normal. No examination was made of the muscles after death to determine whether this species burrowed in this tissue, like the *spiralis*.

It may be interesting to state here the singular fact, that all of the members of this family for several generations back, at about the age of 60, have gradually become insane, and at the same time affected with chronic rheu-

matism and with more or less paralysis. All the younger members of the family are in constant dread of arriving at this age, as they seem to be impressed with the idea that they are all to go in the same way.

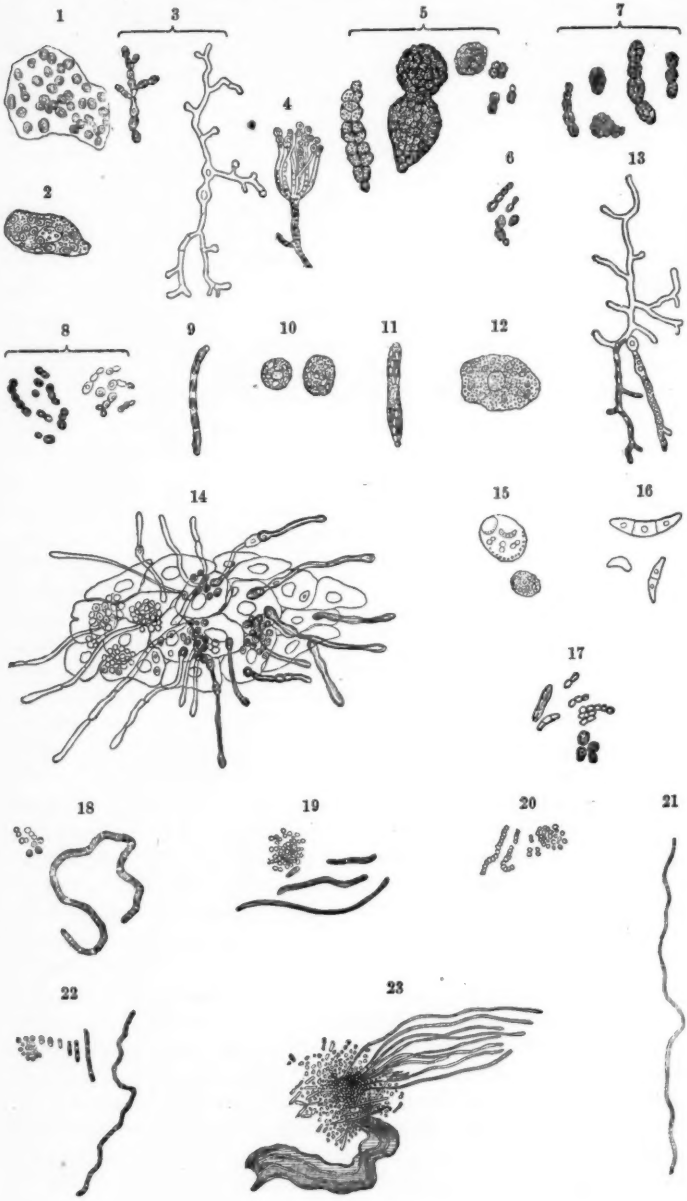
II. In a few instances I have met with a species of *vibrio*, resembling that found in vinegar, in the freshly-voided urine. In all cases where I have found this little animal in the urine, the patients have been debilitated and the urine rancid and fermenting.

III. *Trichomonas vaginæ*.—This little organism occurs occasionally in the vaginal secretions, and sometimes is found in the bladder. It is very active, and produces considerable irritation when abundantly present.

IV. *Ciliaris bicaudalis* (Salisbury).—This organism is smaller than the *T. vaginæ*, and very different in appearance. It is represented at fig. 28. It consists of a single cell, slightly oval, and having two hair-like caudal prolongations. These caudal appendages are situated directly opposite each other, going out in the direction of the longest diameter. The appendages are about twice the length of the longest diameter of the organism. A peculiar characteristic of this animalcular form, is the short, thickly set, ciliæ, all of equal length, which completely cover the cell. These are in constant and rapid motion, while the two long caudal appendages move with a slow, undulating vibration. This parasite is occasionally met with developing rapidly in the secretions of the womb and vagina, and sometimes, in such cases, is met with in the bladder. Wherever it occurs, it produces more or less irritation.

V. *Trichomonas irregularis* (Salisbury).—This species was found abundantly in the urine and vaginal secretions of a Miss W., who, since her arrival here from Germany (ten months ago), has become very fleshy, and has been attacked with peculiar paroxysms, that appear to be between cataleptic and epileptic. They occur almost every night and morning. These parasites occur in large numbers in the urine and vaginal secretions.

The patient is 16 years of age; courses scanty; cheeks rosy, and she appears to be in good health, but her blood is thin and ropy, and she has considerable *cystinemia*. The body of this parasite is smaller and more variable in size and shape than the *T. vaginæ*. It has, as far as I have examined the individuals, always two caudal prolongations arising from the same point, and usually has the beak at the opposite end of the cell. The caudal prolongations are about three times the length of the longest diameter of the cell, which is in the same directions as the hair-like prolongations. No ciliæ occur on the body, as is the case with the *Ciliaris bicaudalis*. Occasionally the beak is almost entirely drawn in or retracted. The body is frequently much elongated and irregular, sometimes regularly oval, at others almost spherical. There is an internal motion in the digestive apparatus, which is a progressive current moving around in a circle, a little posterior to the centre of the organism. Fig. 34 represents the parasite magnified 300 diameters.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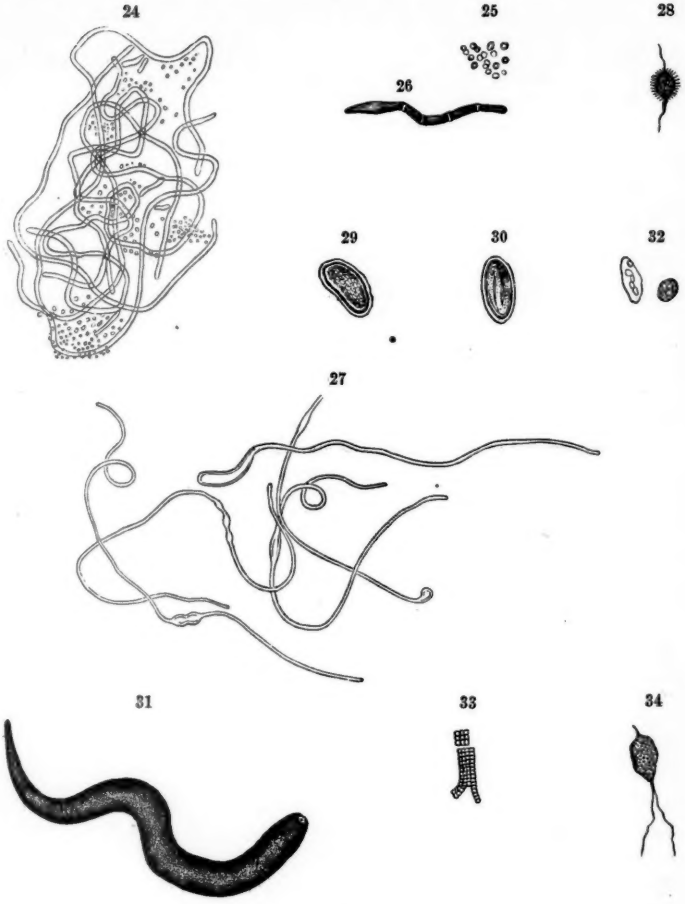

EXPLANATION OF FIGURES.

FIG. 1.—Spores of the *Penicillium pruriosum*, from the bladder and vulva. Fig. 2, spores of same developing in a parent epithelial cell of the bladder. Fig. 3, mycelium of same from the bladder. Fig. 4, fertile thread bearing spores of same from the bladder.

5, 7.—Spores of the *Torulus aggregatus*, developing by duplicative segmentation from the womb in uterine catarrh. Fig. 6, spores of same from the womb, developing by pullulation.

8.—Spores of the *Torulus utero-catarrhalis*, from the womb in uterine catarrh. Fig. 9, spore of same developing into a filament from the discharge in uterine catarrh. Fig. 10, spores of same developing in the mucous cells of the womb. Fig. 11, the mucous cells (fig. 10) developing into broad filaments filled with spores of the *T. utero-catarrhalis*.

12.—Spores of the *T. utero-catarrhalis*, developing in a parent epithelial cell of the bladder. Fig. 13, mycelium of same developing from the spore.

14.—A mass of epithelium, scraped from the vulva, in a distressing case of pruritus. The epithelial cells are filled with vegetating spores of the *T. utero-catarrhalis*.

15.—Spores of the *Botrytis infestans*, developing in the mucous cells from the bladder. Figs. 16 and 17, spores of same from the urinary organs.

18.—Spores and filaments of the *Zymotosis angularis* from the bladder.

19.—Spores and filaments of the *Z. catarrhalis*, from the womb, in uterine catarrh.

20, 21.—Spores and filaments of the *Z. oscillans* from the urinary organs.

22.—Spores and filaments of the *Z. gracilis* in the urine in Bright's disease.

23.—Spores and filaments of the *Z. phosphaticus* from phosphatic urine.

24.—Spores and filaments of the *Z. elongatus* from the urinary organs in a case of irritable bladder.

25, 26, 27.—Spores and filaments of the *Crypta irregularis*, from the urethra and bladder, in ulcerations of these parts produced by venereal disease.

28.—*Ciliaris bicaudalis*, a minute animalcular parasite found developing occasionally in the female genital organs.

29, 30.—The ova of the *Trichina cystica*, found occasionally developing in the human bladder, magnified 300 diameters. Fig. 31, the parasite, after its escape from the egg, magnified about 1000 diameters.

32.—Mucous cell of the womb, with its granules destroyed by the presence and development in it of spores.

33.—*Sarcina cystica* from the human bladder.

34.—*Trichomonas irregularis* magnified 300 diameters.

ART. VII.—*Case of Derangement Limited to a Single Moral Sentiment Occurring Periodically, that Sentiment being in a Perfectly Normal Condition during the Intervals.* By SAMUEL JACKSON, M. D., Emeritus Professor of the Institutes of Medicine in the University of Pennsylvania, etc.

IN May, of 1833, I joined a party of relatives and friends who were making a tour to the Southern States; we stopped in Baltimore for a night; in the evening I was consulted by the wife of one of the gentlemen, Mr. D., respecting a peculiar disease with which he was affected. For three years every alternate Wednesday he was morally prostrated from a loss of his self-esteem, believing himself to be unworthy as a husband, or the father of his children, or a member of society. This condition continued for a week, and on the ensuing Wednesday he awoke restored to his natural character, associating with his family, attending to his official duties, receiving and visiting his friends; all of which he refused to do when under the influence of his disease.

This was on a Tuesday evening, the day before the renewal of the usual paroxysm, and I was requested to prescribe some means which might prevent its recurrence. After some little reflection I determined upon the application of cups to the back of the neck, abstracting six or eight ounces of blood, a hot, sinapised foot and leg bath at bedtime, and a pill composed

of camphor gr. ij and ex. belladonna gr. ¼. The next morning, to the agreeable surprise of all the party, there was no return of the paroxysm, for the first time since his attack. After visiting Washington and Mount Vernon I returned home, whilst my companions pursued their way to Richmond.

In the following November I received a letter from Mrs. D., informing me that the paroxysms had returned before they reached home, and wished to know if I thought it was in my power to give her husband permanent relief. I replied that I could form no opinion on that subject, as the case was entirely new, and I was without any experience as a guide, but if they could come to this city I would undertake his treatment. In a few weeks after they took up their quarters in Philadelphia. When I made an examination of his head I found it to be perfectly formed, without being marked by any protuberances; but at the vertex was a small depression about an inch in diameter and two lines in depth, similar, to a small watch glass. I endeavoured to investigate the cause of his mental condition, but could find nothing to explain it except the existence of insanity in the family. In his natural character he was remarkably mild, affable, pleasant, easy in circumstances, holding the respectable office of clerk in a United States District Court, mingled in the best society; was happy in his conjugal relations, and his children were of fine promise.

Without any apparent cause, being perfectly well when he went to bed, he awoke one morning with a total loss of his self-esteem, as before described. His desire was to be left entirely alone, he refused to mingle with his family, would not receive or visit his friends, or attend to his office; he would go out for exercise only after dark, so as not to be recognized. From this period such had been the tenor of his life for three years, during which time he had visited Europe for several months, to obtain any benefit which might arise from change of scene and for the purpose of obtaining medical advice. He returned home unchanged in his state; one week was passed under the moral depression of a supposed state of degradation, the other in his natural character.

I ordered, from my examination, the top of the head to be shaved, and applied a moxa to the depression, and formed an issue by irritative dressings. A light regimen was directed; a pill prescribed of camphor gr. j, ex. belladonn. gr. ⅛, to be taken twice a day, and also the occasional use of two or three cups on the back of the neck. This course was steadily pursued throughout the winter without producing any other effect upon the condition of the patient than some little derangement in the order and intensity of the paroxysms. Early in May he had an unusually violent attack; when it had passed away he expressed a desire for me to procure him a room where he could be left alone with books and papers, as the presence of his wife and the people of the house increased his moral distress and mental depression. This arrangement was made and a room procured in the

vicinity of the city, but was rendered unnecessary by the sudden cessation of the paroxysms, which, from this time, returned only at long intervals and for a short time.

He continued, with the exception mentioned, in his normal character through the whole summer and until the beginning of the next winter. In the latter part of August he visited Cape May, where he made many friends by his affable deportment, and at a political meeting held there, he was nominated as chairman and made a speech on the occasion. This circumstance is mentioned to show how complete was his restoration. He subsequently visited Bedford Springs and the interior of the State, and returned to this city the last of September. He had become very anxious to return home; I endeavoured to dissuade him from that course, representing the danger of a relapse from a return to all his old associations, but could only procure the delay of a few weeks. He, however, made a visit to New Bedford before he returned to his home and pursuits.

In the course of two or three months after his return he awoke one morning with an attack of mental derangement. He declared that he had ascertained a distinguished statesman to be a traitor and plotting the overthrow of the government, and it was his duty to immediately inform the governor and have him arrested. In a few days it was found necessary to send him to the asylum at Charleston, Mass., where he died in the course of three or four weeks.

I received a letter from his father communicating the result of a post-mortem examination of his brain. The lesion, if it may be so termed, was confined to the arachnoid membrane, at the vertex of the brain, immediately under the depression in the skull; it was thickest in the centre, gradually diminished, and ceasing at some little distance from it.

This case, it appears to me, establishes two important facts: the first, the independence of the MORAL SENTIMENTS in a manner similar to that of the mental faculties is, I think, demonstrated by the fact of a single moral sentiment being diseased for nearly four years; the second, that in monomania intermissions may occur.

ART. VIII.—*Amaurosis of the Right Eye relieved by the Removal of the Filling from a Carious Tooth of the Corresponding Side, and its Final Cure by the Extraction of the Tooth.* By M. F. DE WITT, M.D., of Whitehall, Illinois.

MR. J. P., a merchant, æt. thirty-one, of good constitution, and health always excellent, in the month of June, 1856, while in the act of firing his gun, first discovered that he was blind in the right eye. He had no pain in the eye at the time, nor subsequently, neither were there any spectral illusions. Vision was lost without his being able to ascribe it to any cause.

In this condition the eye remained for nearly twelve years; he could merely discriminate light from darkness, but nothing more. On the 24th day of December, 1867, while conversing with him, I inquired as to the condition of his eye, and at the same time endeavoured to ascertain the probable cause of the malady. Directing my inquiries to the teeth, I learned that some two months before his loss of sight, he had had several teeth filled, and that not long after he had one of these teeth extracted, in consequence of its aching. The other teeth had never given him any trouble. Upon examination I found a large cavity in the first bicuspid of the right upper jaw, which had been neatly filled with some kind of white metal. There was also a fistulous opening upon the alveolus opposite that tooth, and, no doubt, extending to its fang. He said there had been for a long time some soreness and tenderness at this point, and very frequently an abscess formed, which he opened with his knife. Presuming that the amaurosis had its origin in an irritation of the nervous trigeminus, distributed to this tooth, I advised its immediate extraction. Mr. P., being naturally very timid, objected. I then removed the filling from the tooth, in the hope of getting a counter opening, by which I hoped the fistula might possibly close, and the irritation be relieved. This result actually occurred. The fistula closed, the soreness of the alveolus subsided, and vision gradually restored. An offensive mass came out of the tooth soon after the plug was removed. About three weeks subsequent to this (Jan. 12, 1868), when the eye had become nearly as good as its fellow, the soreness upon the gum recurred, and vision simultaneously became blurred. On the 19th day of January I extracted the tooth, when the blur immediately disappeared. At the present time, Jan. 28, 1868, Mr. P. can see quite as well with the right as with the other eye, except in the discrimination of very small objects. There was no foreign substance at the root of the tooth, its interior was filled with pus, and the communication between it and the cavity had become closed.

ART. IX.—*Progressive Enlargement of the Lymphatic Glands. "Hodgkin's Disease."* By JOHN J. BLACK, M. D., of New Castle, Delaware.

JAMES SHOCKLY, a large well-developed mulatto, entered the medical wards of the Philadelphia Hospital, Blockley, in the early part of the month of August, 1865, suffering from enlargement of the lymphatic glands and dropsical symptoms of a more or less general character. He reported that eight weeks previously the "swellings" commenced and increased very rapidly, after he had been wet in a rain storm. His occupation had been that of a general labourer, but for some time previously to his sickness he had been engaged in a saw-mill. He bore no traces of dissipation, and said he had always been sober and industrious; had never had syphilis or severe illness of any kind, and no hereditary taints could be traced. There appeared to be an enlargement of every discernible lymphatic gland in the body, the chains along the lower jaw, sub-occipital, axillary, those in the groins, abdomen, and other parts. The glands on the left side were all decidedly and correspondingly larger than those on the right. The left thigh and leg were very much enlarged and œdematous, the right limb slightly so. There was much fluid in the abdomen; left side of the chest

was full of fluid, and a considerable quantity in the right side. He said these enlargements took place three days after the swellings first commenced. There was no œdema of the face or arms. Passed a normal quantity of urine, light straw colour, containing a few epithelial scales and mucous corpuscles; no albumen; chlorides abundant; bowels regular; pulse 100. Respiration 24, and much impaired, with all the evidences of effusion into the cavity of the chest, such as compression of the lungs, &c.; the right side having decidedly the least collection of fluid. The temperature was not noted. The heart sounds were entirely normal. He stated that last winter he suffered from a series of carbuncles, and during the spring from a fever called lumber fever (nothing more nor less than intermittent fever, and given the name of "lumber fever" in some parts of the west and south-west). The skin was generally dry, and appetite poor, and of course he obtained no comfortable sleep. The treatment pursued was as follows: a little elaterium at intervals, iodide of potassium, iodide of iron, cod-liver oil to be taken at his own discretion, milk punch, quinia, beef essence, eggs, beef steak, &c. In fact the best supporting treatment the house would afford, and the enlarged glands were thoroughly rubbed with the compound iodine ointment, at short intervals.

August 30. I quote from my notes. Pulse 112; respiration 41. Left leg not so much swollen as before, but right leg not much changed. Difficulty of breathing increased. Glands all decidedly smaller, but patient weaker and has lost flesh. The fluid in the abdomen has decreased; in the left side of the chest it has increased; and in the right side there is no change to note.

September 17. Glands much reduced in size. Stomach holds out remarkably well. Every particle of effusion gone from the legs. Dyspnœa nearly gone in consequence of the diminution of the fluid in the great cavities. Abdomen nearly clear of fluid. The improvement in the last two weeks has been very great, and he now wants three days' liberty to visit his family. The man returned at the appointed time, but soon commenced to lose ground rapidly, the glands enlarging again, the effusions returning, extreme prostration coming on, and on the 28th of September following, he died, about eight weeks after admission, his broken-down system having become completely exhausted.

Post-mortem twelve hours after death, Sept. 29, 1865.—Lymphatics of left groin enormously enlarged, above and below Poupart's ligament. The femoral vein obliterated by a semi-organized clot, down to the opening into the adductor magnus muscle. Saphenous and other superficial veins normal. The right inguinal glands were about two-thirds as large as those upon the left side. Here the superficial veins were normal. The arteries on both sides were normal. On the right side the femoral vein was clear, but much dilated at its upper part as though the blood had at times been backed up here. The chains of lymphatics on each side of the lower jaw were much enlarged. Left internal jugular vein very much dilated. External jugular vein of left side also much dilated. These veins on the right side very little if any dilated.

Chest.—Left side very full of a thin serous fluid. Lungs pressed back to the size of a clenched fist and carnified. Some fresh-looking lymph on the pleura in different parts. The effusion in the right cavity was much less than that in the left cavity. Right lung somewhat compressed. Some old adhesions in each lung. Azygos and hemi-azygos veins nearly or quite obliterated by semi-organized clots. The lymphatics of the neck under the

sternum running deep down, enormously enlarged and pressing on all the neighbouring parts. Bronchial glands much enlarged. Along the trachea was a mass of lymphatics enormously enlarged. On the right antero-lateral side of the trachea dipping down from the neck was an enlarged lymphatic, the size of a goose egg. Directly below this, running down to the bifurcation of the trachea, was another nearly as large. The larger contained a considerable granular mass (by the microscope), apparently tuberculous. The smaller one had several small tuberculous masses in it.

Abdomen.—Spleen slightly enlarged and full of little waxy looking bodies beautifully marked. A mass consisting of about one-half of the mesenteric glands, weighed two pounds five ounces. In all this mass there was only one very small and very hard tuberculous spot. Both kidneys of natural size, with a small hydatid in each, both decidedly granular, and resembling tough bacon-rind when stripping off the fibrous covering, which adhered very tightly and would only separate in small pieces. The urine during life showed no albumem under thorough testing. The kidneys were unfortunately made way with before they could be otherwise examined. There was a large mass of glands pressing on the primitive, internal and external iliac veins of each side. In the primitive iliac veins of each side were large pouch-like dilatations, which would admit a hen's egg. I noticed nothing abnormal about the liver, except that it looked somewhat congested; it was unfortunately lost before further examination was attempted. Perhaps the glands weighed would have amounted to about one-sixth of all the lymphatic glands of the body, therefore giving the weight of all the lymphatic glands of the body at thirteen pounds and fourteen ounces.

The brain appeared normal, except an osseous shell attached to the pia mater about the middle of the longitudinal sinus, and lying up against the side of the left hemisphere of the cerebrum. This substance was the shape of, and about half the size of a vomer. The blood appeared somewhat deficient in red globules. The supra-renal capsules were apparently normal. As directed by Virchow, we applied cautiously a little sulphuric acid to the spleen, lymphatic glands, etc., and then iodine, and in all cases got the characteristic blue colour, which caused that very distinguished authority to look upon such degenerations as amyloid in character. The microscope showed the enlarged glands to consist of numerous nucleated cells and a large amount of fibrous matter, in fact differing little from the healthy gland. The kidneys appeared to be of the lardaceous or waxy kind, but the liver did not seem to be thus affected—yet for the reason before stated they were not subjected to microscopic examination. The little waxy looking points in the spleen appeared not to differ under the microscope from the lymphatic glands themselves.

Now what is the trouble under which this man suffered? It is certainly a disease which is rarely developed to the point which it reached in this case, and concerning which very little appears so far as I can find in the annals of medical literature. Dr. Hodgkin, of London, appears to have been the first to notice and describe it in a paper read before the Medical and Chirurgical Society of London, in January, 1832, and published in vol. xvii. of its Transactions. Dr. Samuel Wilks has given in *Guy's Hospital Reports*, Third Series, vol. xi., 1865, a most elaborate account of this disease, and which, as far as I can learn, embraces all that is known

concerning it up to the present time. In fact, according to Dr. Wilks, this disease is likely to be confounded with lardaceous disease, but he thinks it entirely distinct. It, he says, may have a likeness on the one hand to tubercle, and on the other to cancer, but yet is as much a disease "sui generis" as any other, and deserves a separate description of its own. Dr. Hodgkin reported six cases. Dr. Wilks reduces them to four—one being doubtful and the other a syphilitic affection. Dr. Hodgkin described the disease as characterized by enormous enlargements of the lymphatic glands throughout the body, with a peculiar white deposit in the spleen. Sometimes in the liver and other viscera spots were seen pervading its substance.

Dr. Hodgkin considers that so far as can be ascertained, this enlargement of the glands appears as a primitive affection of these bodies, and there is no reason to suppose it is due to inflammation or scrofula, nor indeed attributable to the formation of any adventitious structure. It appears in all cases to consist of a pretty uniform texture throughout, and thus to be the consequence of a general increase of every part of the gland, rather than of a new structure developed in it. In connection with this affection of the absorbent glands is the state of the spleen, which is thickly pervaded by defined bodies. We might suppose that the bodies in the spleen like the enlarged glands, were due to an enlargement of a pre-existing structure, etc. etc. Dr. Wilks in his paper brings forward a number of cases which have come under his own observation.

In my own personal experience I have met with two other cases besides the one above described, one especially of which appeared to answer to the symptoms of this disease. The first of these two, and the most doubtful, occurred while I was serving as one of the Resident Physicians to the Philadelphia Hospital, Blockley, the notes of which were kindly furnished me by Drs. Wm. H. Ford, John S. Parry, and Charles E. Smith, at the same time Resident Physicians in that Institution.

A Prussian, aged sixty-four years, had latterly been serving in the U. S. Army, in active service in the South. The lymphatic glands of the right side of the neck were much enlarged. They softened, and were opened before death, discharging a cheesy matter, with pus. Pleurisy set up, and the man died in about ten weeks from his admission, apparently from exhaustion. Cervical and bronchial glands only found involved; clavicle necrosed at its sternal attachment of the left side. There was much effusion in the chest; no syphilitic marks; and all the other organs were reported normal.

The other case was a mulatto boy, aged sixteen years; had followed the army for some time as an officer's servant. The gentleman with whom he lived consulted me in reference to his condition. I found the cervical glands of the right side very much enlarged, hard, and unyielding. There was also some enlargement of those of the left side; also of those in the axillæ and groins, and those of the mesentery; the spleen and liver were apparently normal. This boy was evidently suffering from tuberculosis of the lungs in an advanced stage.

Shortly afterwards he passed from under my care, was sent to a hospital, and, as I learned, in a short time died. I heard no result of the post-mortem, if any was made; but I have but little doubt that this case approached closely the disease under consideration, combined with general tuberculosis; for many of the cases have been combined with tubercle in one or more organs.

Perhaps of all symptoms in connection with this trouble, that of tubercle is the most common, yet not sufficiently so to typify the disease; so lardaceous disease often accompanies it, yet is oftener absent altogether. There is one striking feature in relation to this affection, viz: I believe all of the reported cases have occurred in males, and it is not confined to any age. If we place it in the order of malignant diseases, we have the tender age of many of the patients tending against such a position. It strikes us as more the result of something specific having entered the economy, as rather an accidental or acquired than an hereditary disease—as approaching nearer the syphilitic range of diseases rather than the truly malignant. In some of the reported cases new tissue seemed to have been developed in the glands; in others there was apparently a mere hypertrophy of the normal structure.

It is not necessary to consider it as an effect of change in the lymph, or of any other metamorphosis of tissue; but it appears rather to be a cause of trouble in relation to these functions. It has apparently not the tendency to death of the malignant diseases; but according to our idea, causes death by mere mechanical action as it were; causing effusion of serum in the great cavities by the bulk and weight of the enlarged glands, as a result of which the patients are gradually worn out and exhausted. This is the serious trouble, otherwise the tendency to death does not appear to be at all rapid, thus certainly taking it from the range of malignant diseases. Perhaps the most constant lesion, next to that of the lymphatic glands, is the enlarged spleen and its peculiar waxy spots; but as the spleen is most probably very closely connected with the lymphatics, these spots, as suggested, may be merely hypertrophied spots of the lymphatic gland tissue, and hence the constant lesion. I believe in no case has there been reported any inflammation of the lymphatic vessels, either afferent or efferent, or really of the glands, except around foreign spots—as tubercle; hence the enlargement is not a result of inflammation of the vessels (lymphangeitis), or of the glands (lymphadenitis).

We rather incline to the idea that this disease is most likely connected with those diseases coming under the action of a malarious influence, the result of the specific malarious poison, if we may call it such. Not that it is developed in every case of malarious disease, yet there is that tendency, whether by the circulation being blocked by some of the pigments lately discovered, or by others undiscovered, it is impossible to say. This fact has struck us forcibly from one or two cases of enlarged spleen we have seen as a result of intermittent fever. Here were the general anæmic symptoms

and a tendency to enlargement of the whole lymphatic system. There may be some cases where this is not at all marked, but we have lately seen two where it was looked for and found. Now, taking these and other facts into consideration, it appears not impossible that this peculiar state, as described by Hodgkin, and referred by Wilks rather to the order of malignant diseases, may be nothing more nor less than a peculiar abnormal enlargement of the lymphatic glands following malarious poison, occurring once only in thousands of cases, perhaps under peculiar unknown influences, and producing dropsy, debility, and death, merely by mechanical pressure and not by their own inherent malignancy. It may be argued that if these enlarged glands are the result of malarious poison the tendency should be to return to health on removing the cause, but we have only to refer to some cases of the spleen enlarging from like causes, which will not recede, and cause death almost in the same way.

As may be inferred from the foregoing statements, the prognosis of the disease is as yet as unfavourable as possible. The diagnosis is not difficult. A general progressive enlargement of the lymphatic glands. Generally, extension of percussion, dulness over the spleen. The mesenteric glands generally enlarged, together with a history of the case, and a knowledge that the patient had been in his life exposed to malaria, and especially if he had not had prompt and efficient treatment. In syphilis we would have the history of the case, chancre cicatrices, &c., the glands comparatively small and firm, and the suboccipital chain especially available. True scrofula is, perhaps, much more concentrated to localities, as the neck, especially; yet it is well to remember that these diseases are often associated, and again that every case of enlarged glands is not either scrofula or syphilis.

In treatment, if we accept its malarious origin as true, of course, we must depend, first, upon the preparations of bark, then iron, iodine, and perhaps cod-liver oil. I say perhaps cod-liver oil, for perchance it will not agree with the patient, as here fats generally do not appear to be well assimilated, probably from the general disarrangement of the lacteal and the abdominal lymphatics generally. The diet should be in every way nutritious and easily assimilated. If the patient could afford it, perhaps removal to pure mountain or sea-side air would be of great benefit, especially if his residence be subject to the least suspicion of malarious influence.

Thus, then, we have attempted to give a somewhat crude view of "Hodgkin's disease," or, as we think it might well be called, "progressive enlargement of the lymphatic glands." So far as we can ascertain, this is the first notice the disease has received in this country, and we indulge in the hope that it may be soon more generally and thoroughly investigated, and placed among the list of well-known though, perhaps, rare diseases.

NEW CASTLE, DELAWARE, Jan. 1868.

ART. X.—*Report of Surgical Cases.* I. *Diffused Traumatic Aneurism of the Femoral Artery.* II. *Circumscribed Traumatic Aneurism of the Occipital.* By R. B. MAURY, M. D., Memphis, Tenn.

CASE I.—Henry R., a healthy mulatto, twenty-one years of age, living in Port Gibson, Miss., was wounded in the lower part of the right thigh, by a conical ball from a Colt's pistol, on the 20th March, 1867. After walking a hundred yards he fell from loss of blood, and from this point was carried a short distance to the office of a physician, where he fainted, and the hemorrhage ceased.

The next day a circumscribed swelling was observed by the patient in the line of the wound; this gradually increased until the 1st of May, when he applied to me for relief.

At this time his case presented the following points of importance: An immense swelling involved the right thigh, about two-thirds of its extent, stretching from the knee to within a hand's breadth of the pubis, and confined chiefly to the anterior and adductor regions of the limb. This swelling was very hard, and presented indistinct fluctuation about the middle and on the inner aspect of the thigh; a distinct impulse accompanied by thrill was communicated to the hand when placed over the course of the main artery. Both orifices of the wound had healed very soon after it was received, and the line of the ball was found, by exact measurement, to be the line of the junction of the middle and lower thirds of the thigh; entering in front, it had passed to the inside of and very close to the femur. Over its course there was heard a distinct bruit, which was limited to a space of four inches vertical and five inches transverse measurement.

Pressure over the femoral, under Poupart's ligament, caused the bruit and the pulsation to disappear. Pressure below the origin of the profunda, at lower part of Scarpa's space, produced the same effect. The swelling encroached so much upon the popliteal space, that it could not be ascertained whether the artery pulsated there or not; but no pulsation could be felt in the posterior tibial or the dorsalis pedis. The leg and foot were swollen, and the patient complained of a feeling of numbness in them; he also complained of great pain in the knee and thigh.

Though the nature of the case was now clear, in order to remove all possibility of doubt it was thought proper to explore the tumour. For this purpose an incision was made to the deep fascia, on the posterior surface of the thigh, near the orifice of exit of the ball; through this a small trocar and canula were introduced, by means of which the swelling was satisfactorily explored, and found to contain dark and clotted blood only; the fascia which bulged into the incision was deeply stained.

Being now convinced that the patient had received a wound of the femoral artery, I determined to search for, and apply a ligature above and below it. It was evident from the course of the ball that the wound must be in that part of the artery which lies beneath the tendinous arch of the adductors.

The patient's condition at this time was quite good; there was some constitutional disturbance, the pulse being 100, and he had lost flesh decidedly during his confinement; but he was a man of good habits, and entirely free from organic disease.

On the 9th May, fifty days after the receipt of his injury, I proceeded to operate, with the assistance of Drs. Wharton, Thomas, and Martin, of

Port Gibson. Chloroform having been administered and the tourniquet applied, an incision six inches in length was made in the line of direction of the vessels through the superficial tissues. The fascia lata being exposed, was opened upon a director along the external margin of the sartorius; this muscle being loosened in its sheath, was drawn well downwards, and the posterior layer of its sheath then opened along its middle the entire length of the superficial incision.

The cavity of the aneurism was soon reached, and a very large quantity of clotted blood was turned out from the inner and posterior parts of the limb. The vessels having been found, the saphena nerve was recognized lying upon their sheath, and upon the inner aspect of the artery there was seen an elliptical wound one-third of an inch in length, through which the blood flowed freely on slackening the tourniquet; this wound in the artery was clean, and presented smooth and rounded edges. A ligature was then applied to the artery on the proximal side of the wound, one-third of an inch above it. In the application of the distal ligature, some embarrassment was experienced from the presence of a large vein, which lay immediately upon the artery in close connection with it, and forked just where the ligature was to be applied. During the delay incident to this circumstance, bright arterial blood started freely from the wound in the artery, showing that the collateral circulation was already established. No other vessels requiring a ligature, the incision was closed, and the limb, elevated and flexed, was wrapped in cotton batting.

At the close of the third day after the operation, a small quantity of bloody water oozed up in the wound; it was of dark brown colour, very thin, and offensive; this was repeated several times, and seemed to be a mixture of pus and blood; it was never considerable in quantity, and pressure upon the artery in the groin did not seem to influence it.

The patient's general condition continued good until the 18th May; the pulse was about 100; the appetite fair; the circulation in the leg and foot perfectly satisfactory. No pulsation could be felt in the arteries of the leg, but the temperature was good and the capillary circulation undisturbed. The incision had healed except at two points, through which pus was discharged. During the twenty-four hours subsequent to this date, high fever was established and the limb became much swollen. On the 19th a counter opening for the evacuation of pus was to have been made on the inner side of the thigh; but at 3 o'clock in the morning profuse hemorrhage burst forth from the wound while the patient was asleep, and, though a tourniquet was at hand and a nurse was sitting by prepared to apply it, more than a pint of blood was lost before this could be accomplished. The hemorrhage having been controlled, the tourniquet was removed and pressure kept up over the artery by the finger until daylight.

The closure of the incision made in the operation for ligature, the extended accumulation of pus in the limb, and the uncertainty in regard to the exact cause and source of the hemorrhage (both ligatures being still fast), discouraged any hope that might otherwise have been entertained of remedying the trouble by reopening the wound and applying another ligature. To make effectual compression without serious risk of gangrene was thought to be impossible, and amputation was considered the only course compatible with safety of life to the patient. The limb was therefore amputated the same morning, by the circular method, at the seat of ligature. Six ligatures were required on the stump; the femoral artery, which had been cut just above the proximal ligature, was found to be firmly closed by a clot, and though it seemed very secure, a ligature was put on

it also. In the adductor region a pouch, which had been filled with coagula and afterwards with pus, extended five inches upwards in the stump towards the pubis; this was lined by a thick membrane. An examination of the limb showed that, in amputating, the artery had been divided exactly one line above the proximal ligature, and its condition here and in the stump illustrated well the three elements concerned in the process of closure, viz., external inflammation agglutinating the vessel and the adjacent tissues, an internal fibrinous coagulum, and firm adhesion of this to the collapsed walls of the artery. The proximal ligature was still inclosed by coagulated lymph.

The artery was now slit up with scissors between the two ligatures, and for a distance of three inches below; the ligatures were found to be an inch and three lines apart. At the seat of the distal ligature the artery had been divided through about one-third of its circumference; the remainder was still entire, and the ligature, though loose, was not detached. The line of division presented a clean, smooth cut, devoid of undue ulceration and all unhealthy appearance; this had been the seat of the hemorrhage. A coagulum was imbedded in the surrounding tissue which bordered upon the track of the ligature. Below the ligature (one-tenth of an inch by exact measurement), on the posterior wall of the artery, there appeared the open mouth of the first muscular branch of the popliteal; it was a large branch admitting readily an ordinary sized silver probe, and being traced for two inches, was found to run almost horizontally backwards and outwards. External to this and nearly on a line with it was the mouth of a smaller branch which admitted a large sized sewing needle No. 2. The main artery was healthy up to the very line of its division by the ligature, was free from stain or any appearance of a coagulum having ever been formed there, and so were the branches just described. All traces of adhesive inflammation at the seat of ligature, if any ever existed, had been washed away.

No cause could be discovered for the failure of the distal ligature to close the artery, except the proximity of this large muscular branch, through which the collateral circulation was brought in part into the main channel. The precise value of this as a disturbing cause is a subject upon which surgical knowledge at the present time is deficient. That it may and does prevent the formation of an internal coagulum is certain; but that it can prevent the deposition of adhesive lymph within the point of ligature, a process by which alone (with the exception of outside inflammation) arteries are sometimes closed, is, I think, not so susceptible of demonstration.

After amputation this case did well; convalescence was uninterrupted and complete, and the man soon returned to his occupation of shoemaker.

CASE II.—On the 18th November, 1866, Mr. A. S., a planter, fifty-five years of age, received a stab on the back of the neck, near the occiput. Free hemorrhage ensued. When his family physician arrived, this had ceased, and the wound, which had been made by a common pocket-knife, was closed by adhesive plaster. A small tumour formed at the seat of the wound, the importance of which was not recognized by the patient until the twelfth day, when it ruptured and hemorrhage to syncope occurred. His physician being called immediately, the wound was filled with lint saturated with the muriated tincture of iron, and a bandage applied. In a few days this dressing came away, and hemorrhage again followed. A consultation of physicians in his neighbourhood was then called, and the same treatment adopted with the same results.

On the 19th December I was sent for to see the case. Several consultations had been held, but no measures had been taken to prevent return of hemorrhage but compression. The patient had suffered four very large hemorrhages; twice he had bled to syncope, and his condition now was exceedingly critical; he was too feeble to sit up even in bed, and his wound presented an ugly and very unhealthy appearance.

The knife had entered at the posterior margin of the left sterno-mastoid, and passed obliquely forward beneath that muscle, wounding the occipital artery in a rather inaccessible position; confined pus had burrowed beneath the sterno-mastoid; the cavity of the false aneurism was filled with coagula and small sloughs. These were removed while the patient was under chloroform, and the wound was carefully examined, but the artery could not be induced to bleed, and the source of the hemorrhage was not discovered.

As already shown, the man's condition at this time was exceedingly unfavourable for the performance of any operation, and not being satisfied with the manner in which compression had been made or with the styptic used, I applied a graduated compress saturated with the liquor ferri persulphatis, with the faint hope that further hemorrhage might be prevented, or at least postponed, until the patient could be so stimulated and strengthened as to be better able to stand an operation. This dressing remained three days, and when it came away a profuse hemorrhage followed, in which he again fainted.

Being called again to the case, which was sixteen miles distant, I found him much more feeble than at my first visit. The pulse was scarcely perceptible, his voice could not be raised above a whisper, and any prolonged search for the bleeding point which might involve further loss of blood was clearly out of the question. Indeed he was reduced so low that it seemed almost useless to undertake any operation for his relief, and I hesitated about the propriety of administering chloroform. On the other hand, it seemed certain that the only chance for life lay in the application of a ligature to the artery. Chloroform having been again administered and the wound cleared, the cavity was found to be so deep as to necessitate enlargement of the wound in the direction of the course of the artery, and division to a considerable extent of the fibres of the sterno-mastoid. Hemorrhage now came from the bottom of this wound, proceeding from a soft, pulpy mass of disorganized tissue; the bleeding vessel was twice picked up with the artery forceps, and a ligature as often thrown around it, but each time the thread cut through and would not hold. Pressure over the carotid did not control the bleeding, and so much blood had already been lost during these fruitless attempts to find sound tissue that it seemed almost certain the patient would not survive the operation. The face was livid, the pulse imperceptible at the wrist, and the surface covered with a cold sweat. Further attempts to tie the artery were therefore discontinued, the wound was again plugged with lint steeped in the persulphate of iron, and the graduated compress reapplied.

All efforts were then directed to bringing about reaction. For several hours it was doubtful if he would revive; he did so, however, and had no return of hemorrhage, and, though his convalescence was very slow, he made eventually a perfect recovery.

This case affords another illustration of the value of styptics and compression in the treatment of arterial hemorrhage. The same means would probably have been successful in the early treatment of the case, if the styptic had been brought into immediate contact with the bleeding point.

ART. XI.—*Compound Fracture of the Sacrum, followed by Discharge of Urine through the Wound; Recovery.* Reported by H. D. BURLINGHAM, A. M., M. D., late Passed Assistant Surgeon U. S. Navy, now of Galesburg, Ill.

ABOUT 5 o'clock A. M., on a rainy and cold morning, September 20, 1866, I was called to see G. W., American, railroad conductor, æt. 25, robust, and of good habits. He was lying upon his left side, before the stove, in the position he had been left a few minutes before, unable to move, except his upper extremities. His surface was pallid and cold; countenance anxious; pulse feeble, and symptoms generally those of great shock to the system.

I learned that sixteen miles up the road his train had parted, and that in running back to pick up the after portion of it (he being upon the roof of a car), there was a collision in consequence of the detached cars having followed with considerable velocity on a down grade. The concussion threw him into the air, and in falling, his back struck the car, whence he bounded off down an embankment more than eighty feet. Arrived at the bottom, he began to scramble up, at first feeling but little injured. When half way up he began to experience great pain and difficulty in walking, and had a sensation as though warm blood was streaming down his legs. He was there found and carried to a car. Whiskey was administered, as they recognized the meaning of his pale face and collapsed condition. Blood was flowing from his back, but not in an alarming amount. On examination, I found a bruised, gaping wound, three and a half or four inches long, situated over the right lateral portion of the sacrum, three-fourths of an inch from a line corresponding to the spinous processes and extending down to about the base of the coccyx. Using my finger as a probe, I found the soft parts detached in various directions, and toward the right ischium the finger failed to reach the bottom of the wound. The portion of the sacrum uncovered gave signs of comminuted fracture upon the surface, but not satisfactory evidences that the whole thickness of bone was involved. The coccyx was not fractured. There were not discovered any considerable injuries elsewhere. The examination caused no pain.

I gave an unfavourable prognosis to his friends, and immediately began efforts to rally him from the shock. I urged him to make the attempt to urinate as soon as he had rested a little. At present, he had no desire, and thought he had emptied his bladder about 12 o'clock that night. Percussion over the bladder did not reveal distension. During the day reaction was scarcely perceptible. On leaving him at 10 o'clock P. M., he had not urinated, nor was the bladder distended. I directed that if he should have difficulty in passing water, when he desired to do so, they should send for me immediately, which they did a little after midnight. I endeavoured to pass a catheter, but found the neck of the bladder barred by a most rigid contraction, which was particularly manifest to the finger upon the perineum. After patiently and carefully endeavouring, for two hours, to insinuate catheters of different sizes and kinds into the bladder, I abandoned it for a little time, to await the effect of a liberal dose of morphia. Meantime a most urgent call came for me to go a few miles into the country. I therefore asked Dr. E. L. Phillips to take

charge of my patient, while I went to the country. I returned about 8 o'clock A. M., and was delighted to find that Dr. P. had succeeded a short time before in introducing a catheter. He had not been able to do it however until his patience and hope of success were well nigh exhausted; and then only with a very small (No. 2 or 3) gum-elastic conical catheter. There had flowed out eight to ten ounces of urine highly coloured with blood. Up to this time the patient had manifested great fortitude, but now began to be rather melancholy and restless, and showed a tendency toward delirium. Means were adopted to remove all possible sources of irritation. He complained of no pain. Stimulants were cautiously administered. In about twelve hours the catheter was again introduced, but under nearly as great difficulties as before. The contraction of the sphincter vesicæ was tetanic in force. There did not seem to be any torn places in the mucous membrane. Ether was given, but not up to the point of complete anæsthesia. Urine about the same in quantity and quality. General condition of patient but little changed.

On the 22d the catheter was passed with slightly less difficulty. The patient now expressed a desire to see his old army surgeon, Dr. Hance, of Aurora, Ill. The doctor came down the same evening, and, after a careful survey of the case, gave no sort of hope that he could recover, but added, "that if it was possible for *any one* to survive such a condition, this man may, for I have often observed his wonderful powers of endurance while in the army." There seemed to be a little reactionary effort now, and water-dressings were applied to the wound. He was delirious while asleep, and seemed to be troubled about his train.

During the night of the 23d he declared that urine was passing through his back, but the attendants could hardly believe it true, although they discovered the smell of urine upon the cloths.

At my next visit, other physicians being present, I asked him to contract the bladder, while we stood behind him, and immediately there issued quite a stream of urine from the lower angle of the wound. The catheter was now tried again, and a No. 8 or 10 gum catheter entered the bladder almost without obstruction. From this time forward there was never any difficulty in passing a large instrument. An attempt was now made to drain the bladder by keeping a catheter in it, and thus prevent the urine from passing through the wound. Almost every conceivable position was resorted to with this view, but for several days without success. The water would keep welling from his back as well as dribbling from the catheter. The patient was delirious much of the time; nor could he be persuaded to take nourishment in any sufficient amount. The pulse grew feeble; the edges of the wound rolled outward and began to slough; the neighbouring parts began to be excoriated, and bed-sores seemed imminent.

His condition was getting rather the worse for the next two weeks, when, one day, he was placed well over upon his right side (a position he had been in before), and to our agreeable surprise urine flowed through the catheter kept in the bladder, without any escape of it through the back. Here, for the first time, was a little glimmer of hope, and the first indication of the locality of the opening into the bladder.

I inferred that the new outlet was at the neck, and upon the left side. The delirium seemed to be abating, and his bed was prepared with reference to keeping him constantly upon the right side. Scales and fragments of the surface of the sacrum were beginning to exfoliate. A probe could be passed from about an inch above the base of the coccyx, and about three-

quarters of an inch to the right of the median line, across the pelvis, forward and slightly downward, a distance of five inches, until it was obstructed by bone, denuded or fractured. The point thus reached was, of course, quite a distance to the right, and behind the neck of the bladder. This was the track by which the urine found its way to the surface, and seemed very narrow, as the probe could be moved only slightly from side to side.

From this time onward the urine was kept from flowing through the wound (except when his position was changed, or he strained in defecation), by keeping a catheter constantly in the bladder. The instrument was removed once or twice a day for the purpose of cleansing, or to introduce a new one. The urethral irritation became considerable in a short time, but *then* did not appear to get worse. Ether was administered when the instrument was introduced. After the first few days the appearance of blood in the urine ceased. There was a great abundance of mucus, and at times *an astonishing amount* of pus. For the most part, the reaction of the urine was strongly alkaline, ammoniacal in its character.

There were not, at any time, evidences of effusion into the peritoneal sac, or of infiltration into the connective tissue. On two or three occasions, the phosphates were thrown down so abundantly in the urine, that the catheter had to be removed every few hours on account of the incrustation. This condition readily yielded to hard cider and benzoic acid. Bed-sores had formed in some places, but by the end of the fourth week he was taking more nourishment, and his general symptoms were less threatening. His bowels were kept in tolerable condition by an occasional mild cathartic, and by water injections. He now suffered much pain, but not such as is produced by lesion of special nerves. Morphia acted charmingly, and soon became indispensable. Pus was discharging freely from the wound, and healthy granulations began to appear.

The patient had complained of soreness about his shoulders almost from the first. The right one gradually got well, but during the fifth week the left one began to swell rapidly, and grow very painful. In a short time pus was detected, and an opening being made over the deltoid muscle, which gave exit to several ounces of very fetid pus. The amount of pus now discharged daily from the wound, the bladder, and from this abscess was almost incredible. Nutrition and stimulants were urged. He tolerated milk better than anything else. In spite of bandaging, strapping, and compression, the abscess followed down the muscles of the arm, and had to be opened in several places. After two or three weeks more, abscesses began to form about the left great trochanter, in the same manner as about the shoulders. Their history and progress were about the same. It seemed a little strange that these abscesses should have formed on the left side, rather than upon the right, which received the constant pressure of the weight of the body. They continued to discharge for a few weeks enormously, and then gradually subsided. The ulcers from the bed-sores also filled up with sound granulations. By the first of February, 1867, but little pus was seen except as it came through the catheter. I had at different times left the catheter out for a while, in order to learn the condition of the opening into the bladder, but invariably in the course of two hours or less, the urine would begin to flow through the back, and of course cause much mental depression to the patient. I could see, however, that the sinus was contracting, and I hoped that in some way nature would ultimately suc-

ceed in closing the false opening in the bladder. His appetite became good, and he slowly gained flesh and strength.

On the 6th day of May, nearly seven months from the time of the injury I left the catheter out for a few hours, and was delighted to find that the water did not flow through the wound, after a successful attempt to evacuate the bladder naturally. He had control of the sphincter and other muscles of the bladder. Since that time the catheter has not been introduced, but on a few occasions urine has passed through the sinus. The irritation of the urethra gradually passed off. Pus and mucus continued to be discharged for a long time. Occasionally a scale of bone or portion of dead tissue obtained exit from the wound.

In August last the patient was taken to Missouri, after he had gained considerable strength, and was riding out nearly every day, and could get about the house with the aid of crutches. His right leg had become considerably contracted from the cicatrix of a bed-sore over the great trochanter, and from the position we were obliged to keep him in so long. During the summer he gained considerably, but occasionally suffered from the formation of pus, which discharged itself mostly from the old wound. I believe there has been no escape of urine for several months. At the present time (Feb. 15, 1868) he is convalescing from one of those repeated prostrations which every time threaten his life.

This case has excited much interest amongst the profession in this vicinity. The questions which give rise to most speculation, are: How was the opening in the bladder produced? Where was the point of opening? When did it happen? By what route did the urine find exit? Why was there not infiltration into the connective tissue, or effusion into some cavity? Is it probable that the sinus leading to the bladder will ever be entirely occluded? How could there be such an amount of violence upon the sacrum, with comminuted fracture, and so little injury to the sacral nerves? The readers of the Journal will remember a paper by Dr. Lidell in the April No. for 1867, on the Rupture of the Abdominal and Pelvic Viscera, but amongst the cases cited I find no parallel to this. Nor have I found, thus far, any record of such a case. My opinion in regard to the above questions gradually took form as I watched the progress of the case. I believe the wound was produced by the immediate effects of the injury, but that the urine did not pass out at first in consequence of a tonic spasm at the neck of the bladder, from the irritation.

It seemed demonstrated that the locality of the rupture was at the neck, and upon the *left* side. In regard to the route of exit, and why infiltration did not occur, I have no definite idea. How nature could form a water-tight, narrow tube, in that locality, of such length, and in so short a time, is a puzzling problem.

There were many very interesting phases of the case during its progress, but the details would occupy too much space.

TRANSACTIONS OF SOCIETIES.

ART. XII.—*Summary of the Proceedings of the Pathological Society of Philadelphia.*

1867. *Sept.* 26. *Cancer of the Liver.*—Dr. WM. PEPPER, in presenting the specimen, gave the following history of the case from which it was derived:—

B. T., æt. 50, Irish, domestic, married and has seven children, four of whom are now living, was admitted to Blockley Hospital July 29, 1867. So far as could be learned, she belonged to a healthy family. She first noticed a tumour below the right ribs about eight months ago, since when it has grown steadily. On admission, the following symptoms were noted: Extreme emaciation; mammæ atrophied; skin pale, but without the slightest tinge of jaundice; œdema of left hand, and of both legs up to the knees. The chest walls were very thin and resonant throughout, and the respiratory murmur pure; cardiac sounds normal. There was a large nodulated mass extending across the entire upper portion of the abdomen, the lower border being easily traced from two inches above the crest of the right ilium, across to a point midway between umbilicus and pubis, then upwards to about an inch and a half above and an inch to the left of the umbilicus, and thence to the left hypochondriac region in a line about three inches below the margin of the left ribs. This mass, evidently the liver, presented the chief enlargement in its right lobe, the lower border of which was rounded and very hard, and, on passing the hand beneath it, several large hard nodules could be felt attached to the under surface. There was also a large rounded mass springing from upper surface of left lobe. Hepatic dulness, in the line of the nipple, began on the sixth rib, and extended downwards nine inches. Width of right lobe, measured over the most prominent part, eleven and a half inches. The most projecting nodulated part occupied a position above and to the right of the umbilicus, and measured eighteen inches around the base; the skin over this was tense and glistening, but neither adherent nor discoloured. The whole mass pulsated visibly, but there was no murmur audible over it; it was also exceedingly hard, inelastic, and but slightly sensitive. Veins of the abdominal walls, especially the right superficial epigastric, much enlarged; the latter tortuous, and apparently transmitted but little blood, and that in an upward direction. External mammary veins distended, their current strongly upwards, and apparently they formed an anastomosis with the epigastrics. No evidence of peritoneal effusion.

31*st.* The position of the liver appears to vary with degree of distension of the abdomen, since the lower edge of the right lobe is within half an inch of the crest of the ilium; indeed, the whole liver is somewhat rotated upwards and to the right, and can be moved by firm pressure. Urine discharged involuntarily; bowels quiet. Marked puffiness of the eyelids gradually appeared, with decided chemosis; pupils moderately contracted.

Oct. 2. Has been lying for several days in a drowsy state, from which it is very difficult to rouse her; position is constantly on the left side, half turned over on to the face. Œdema and chemosis much increased, most marked on the left side. Has had one thin and rather light-coloured stool. Pulse 108. Temperature in left axilla 100.8°. Towards evening, temperature 101°; the œdema of the dependent side of the neck had so increased as to interfere with deglutition and respiration, and death occurred the following morning at eight o'clock.

Post-mortem.—Body much emaciated; the surface pallid, without the least jaundiced tinge.

Brain healthy; no disease of vessels at the base, and no cause of pressure upon the ophthalmic veins.

Thorax.—Upper costal cartilages ossified; lungs anæmic and slightly œdematous in parts, otherwise entirely healthy. Each pleural cavity contained about f℥ij serum. *Heart* rather small; contained a considerable amount of soft dark clots; some thickening of the edges of the mitral valves, and at the seat of the corpus aurantii on one leaflet of the aortic valve a small calcareous nodule.

Abdomen.—A small amount of peritoneal effusion, with several shreddy masses of dark-reddish lymph, lying free in the cavity; the peritoneum itself smooth and apparently healthy. Spleen of normal size, rather pale and soft. Kidneys highly fatty; right smaller than left, and in one place presented a patch of firm yellowish tissue, somewhat depressed below surface. *Stomach* presented no disease of its walls; the mucous membrane injected, of a slate colour. Small intestine quite healthy; mucous membrane of the duodenum congested and ecchymosed in spots. Large intestine contained a considerable amount of partially-formed, well-coloured feces; its walls healthy, excepting that the transverse colon was closely adherent to, and partly blended with, the mass growing in the anterior border of the liver. The mucous membrane at this place was ecchymosed, and in several spots so softened as to break down under the slightest pressure. The omentum small, shrivelled, and contracted; all the fat removed. *Liver* weighed 7 lbs. 15 oz. Posterior section apparently free from disease. Anterior part has two large masses, the larger seated in the right lobe, and measuring 5⅝ inches in diameter. Antero-posterior diameter of this lobe measured 10 inches, the lateral 7 inches. The large rounded mass presents numerous whitish nodules, varying in size from that of a pea to that of a walnut, separated by narrow bands of dark liver-tissue and distended tortuous veins. The peritoneum over this part thickened and whitish. A section of this mass showed its structure to be quite dense and fibrous, especially in its central portion, while the periphery, to the extent of 1½ inch in width, was of a delicate rose-pink colour, interspersed with spots of deep purplish red. It did not bleed on section, and scarcely broke down on pressure, only here and there showing signs of breaking down; a small quantity only of cancer-juice could be expressed. Posterior portion of this lobe contained but one nodule, ⅓ inch in diameter. Large nodule in anterior border of the left lobe measured 3 inches in diameter, embracing the whole space between the layers of peritoneum, being merely surrounded by a layer of liver-structure one line in thickness. This mass could readily be enucleated from its seat, being merely attached to the surrounding liver-structure by a capsule of connective tissue. On section, presented a central portion of almost pure white colour, very firm and dense, surrounded by a rim of

tissue quite elastic, not easily breaking down under pressure, smooth on section, and of a grayish-white colour, variegated with spots of pinkish red. Peritoneum over this mass but slightly thickened, and had a few enlarged, congested veins. In the posterior part of this lobe was one small nodule, about one inch in diameter.

The true liver-structure appeared in a state of nutmeg congestion, and rather pale and flabby. These changes were not marked, and, when examined microscopically, the liver-cells were quite healthy, with merely a slight excess of fatty and granular contents. The impression given by the entire mass was that of enormous malignant growths arising in the anterior border of a comparatively healthy liver, not growing at the expense of the liver at all, but merely distending the structure over their increasing bulk. There were, in addition, several large cancerous masses in the fissure of the liver, one of them fully 1½ inch in diameter, which seemed to be diseased glands. The common bile-duct was quite large, as was the hepatic duct also; but on tracing the cystic duct, the gall-bladder was collapsed, its walls greatly thickened, and closely adherent to an enlarged cancerous gland. The vena porta was perfectly healthy, and apparently had not been at all compressed.

Microscopic examination of the morbid growth showed the most typical appearances of encephaloid cancer.

The points of most interest illustrated by this case appeared to be the following:—

1. The entire absence of adhesions between the convexity of the liver and the diaphragm or abdominal wall, so that the position of the organ varied greatly with the varying distension of the abdomen, and could readily be altered by moderate pressure.

2. The strictly primary character of the disease of the liver, unless indeed it can be held to be consecutive to the cancerous growth in the glands in the fissure of the liver, no other organ of the body being affected.

3. The almost complete limitation of the cancerous growth to the anterior border, the remaining part of the liver being quite healthy, and able to perform its function, as shown by the entire absence of jaundice, and the well-coloured feces found in the colon after death.

4. Attention may be called to one or two peculiarities in the symptoms presented during life; to the extensive œdema of the extremities, combined with chemosis and œdema of the eyelids, without any ascertained local cause, and due probably to extreme anæmia; and, finally, to the temperature, as recorded both morning and evening. In a case of cancer of the liver reported to this Society by Dr. Da Costa, and published in the second volume of their proceedings, the temperature was unusually low, and allusion is made at the same place to several other cases of cancerous disease in which the same phenomenon of reduction of temperature had been observed. In the present case, however, the thermometric record—100.8° in morning, and 101° in evening—shows that we cannot regard reduction of temperature as a diagnostic sign of cancerous disease, unless indeed we hold that the observation of the temperature for a single day only, and that day the last of life, does not furnish sufficiently reliable results to base any inferences whatever upon.

Oct. 10. *Cancerous Tumour of the Eyeball, occurring in a Child of Eighteen Months.*—Dr. John Ashhurst, Jr., said this case was under the care of Dr. C. J. MORTON, of Chester, Pa., who contributed the specimen, and furnished the following notes of the patient's history:—

Edgar S., born Jan. 1, 1864. When about eighteen months old, the pupil of the eye which was subsequently the seat of the tumour was observed to be widely dilated, being three or four times as large as that of the opposite side. Slight conjunctivitis followed, with marked intolerance of light. A convulsion, preceded by high fever, but leaving the child apparently as well as usual the day after, was the next phenomenon noted. Blindness of the affected eye soon followed, and from this time the progress of the case was from bad to worse. The eyeball was removed, at the earnest solicitation of the parents, and confessedly as a palliative mode of treatment merely, on March 31, 1867, by Dr. Thos. Geo. Morton, of Philadelphia. The disease returned, *in situ*, in about six weeks, and death, preceded by much suffering, ensued on June 30, 1867. The child's complexion, which was somewhat characteristic of the cancerous cachexia before the operation of March 31, became very markedly so after that time. The specimen shown to the Society was the secondary tumour, removed after death. Careful inquiry failed to detect any evidence of the disease being hereditary in the child's family.

Oct. 24. *Osteo-Enchondroma of the Venter of the Right Scapula.*—Dr. GEO. PEPPER gave the following history: This specimen was removed from the body of a coloured boy, aged 16 years, who died in the most extreme condition of emaciation from general tuberculosis. During life the right scapula was discovered to be rather more projecting than normal, but no particular symptoms were noticed in connection with it. The growth sprang from the under surface of the bone, close to the posterior border, and about midway between the upper and lower angles. The tumour had a flat mushroom-like appearance, with a broad sessile attachment and thick overhanging edges; it measured 1½ inches in its greatest and about 1 inch in its lesser diameters, and was elevated about one inch above the surface of the bone which seemed of perfectly healthy character.

The growth consisted, for the most part, of a very dense bone over the surface of which was superimposed a thin layer of a pinkish, translucent, cartilaginous-like substance. On section, the pedicle appeared to be osseous in structure, while the expanded body was partly osseous and partly calcareous, overlaid as before stated by a thin layer of cartilage. The osseous structure was cancellous in character and of a reddish hue, while the calcified portion was of a dull white colour and very dense and hard. The marrow cavities, which were abundant and large, contained a reddish gelatinous material. When the bony structure was examined under the microscope the bone corpuscles were found to be small, and crowded, and the canaliculi indistinct. The calcareous matter showed amorphous, highly-refracting particles (apparently mineral salts), with no true osseous tissue. The reddish gelatinous material consisted of granular fat, free oil globules, blood-corpuscles, and irregularly rounded and oval granular nucleated cells. The pinkish translucent substance presented all the characteristic appearances of cartilage structure, except that the loculi were crowded and the nuclei shrivelled and grotesquely irregular.

Dilatation of Heart; with Tricuspid Regurgitation, and Fenestrated Condition of Aortic Valves.—Dr. WM. PEPPER read the following history:—

Henry S., æt. 40, shoemaker, admitted to Philadelphia Hospital Sep-

tember 25, 1867. For the past twenty years has been very intemperate; but enjoyed good health until three months before admission, when he was attacked with severe cough and dyspnœa, following exposure. The cough disappeared in a few days, but the dyspnœa steadily increased, although he continued to work at his trade until two weeks before admission, when his legs became œdematous and dyspnœa was so extreme as to prevent him from lying down. He died within forty-eight hours after entering the ward. Physical examination showed the heart to be enlarged, and its action very feeble; there was also a systolic murmur to left of sternum, from fourth rib downwards, though not heard to left of apex beat. The lungs were intensely congested; and veins of neck distended and probably pulsating. There was marked lividity of face and neck.

Post-mortem.—*Liver* very large and heavy, and presenting the typical nutmegged appearances. *Spleen* somewhat enlarged, heavy, and dense: trabeculæ unusually evident. *Kidneys* much congested, the cortical substance dotted with livid red spots: the cones in places were marked with livid streaks, in others with congested points. *Lungs* tightly adherent; deeply congested, but still floating in water. A dense puckered cicatrix at the right apex. Bronchial tubes unnaturally rigid and uniformly dilated. *Heart:* No pericardial adhesions; but little pericardial effusion. Two large white spots on the anterior face of the right ventricle; its cavity filled with chicken-fat clots, while the right auricle was distended with dark blackish clots. Right cavities of the heart enormously dilated; walls of right ventricle of almost normal thickness, and very hard and tough; walls of right auricle were, however, much thinned. Tricuspid valves thickened and presented several irregular fibroid nodules upon their surface: hydrostatic test showed them to allow marked regurgitation. The pulmonary artery dilated, rather exceeding the aorta in size: its walls were, however, healthy, and its valves competent and healthy. Left cavities of the heart contained less blood than the right, and the clots here were more dark and soft. The auricle and ventricle also less dilated, and the muscular structure of the ventricle less changed—being quite red and healthy looking. The mitral valves were slightly thickened, and were hydrostatically competent. The aortic valves very thin towards their insertion, the upper borders were markedly fenestrated, but were also competent.

Typhoid Fever; Death on Eleventh Day; Enlargement of Peyer's Patches without Ulceration; Vesicular Distension of Follicles throughout Intestines.—Dr. WM. PEPPER gave the following history:—

John B., æt. 17, German, admitted to Philadelphia Hospital August 6, 1867. Had been living for two years in Baltimore, and had suffered for nearly ten months with intermittent fever; legs and scrotum became œdematous six months before admission. Entered Baltimore Hospital in April, and remained under treatment there three months, being much relieved. In early part of April, suffered for several days, with almost complete suppression of urine. When seen in August, legs still œdematous, and surface of the body sallow. Bowels quite loose; urine albuminous. He was ordered sulphate of cinchonia in antiperiodic doses, and Basham's mixture; the œdema almost disappeared, and he gained strength rapidly. This improvement continued until September 18, when diarrhœa and vomiting set in, with marked fever; his pulse ranged from 96 to 106;

the expression of his face was dull and stupid, though he could be roused, and answered intelligently; the skin was hot, and there was marked hyperæsthesia of surface, but no eruption; the tongue dry and covered with sordes. On the 27th the right parotid gland became inflamed. He remained in this state until the 28th, when he began to sink, and died early in the morning of the 29th, at the beginning of the eleventh day of the disease.

Post-mortem.—Brain and spinal cord not examined. Heart small and flabby; its valves quite healthy. *Spleen* enormously enlarged and almost circular in outline, being 8 inches long and 7 wide; its tissue dark and very soft; capsule thickened and puckered in one place, and adherent to a fold of the intestine. *Liver* enlarged, of a pale slate colour, soft and pasty. *Kidneys* congested, and presented slight granular change. *Intestines* distended with flatus and fluid feces. The large intestine presented throughout its extent staining of the mucous membrane by its contents; and marked stellate injection, especially in the upper part. Follicles of the mucous membrane much enlarged and distended, so as to form little pearl-like prominences, acuminate, containing a drop of turbid thick serum, and when ruptured leaving little oval ulcers. This condition was most marked in ascending colon, where the mucous membrane was closely studded with these follicles, so that they imparted a mammellated feeling to the hand when passed over it. This enlargement extended up to the vermiform appendix, though not so marked in the head of the cæcum as below. The solitary glands throughout the small intestine were enlarged in the same way; the lesion being most marked in the ileum, diminishing in the jejunum, and again presenting itself in the duodenum. Peyer's glands were all enlarged, especially towards the ileo-cæcal valve, but none of them had as yet ulcerated; their surface was rough and irregular, presenting numerous curved and branching ridges. Mesenteric glands also enlarged.

Nov. 14. *Encephaloid Cancer at the Bend of the Arm.*—Dr. S. W. GROSS exhibited a well-marked specimen of the hæmatoid variety of encephaloid cancer at the bend of the arm, and read the following history of the case:—

Philip Messimer, a blacksmith, æt. 42 years, early in May, 1867, while shoeing the hind foot of a fractious mule, was injured by the animal suddenly jerking the leg away, thereby powerfully wrenching his right elbow. There was no external injury; but two weeks later, on waking in the morning, he found his elbow and forearm much swollen and painful, conditions which did not exist on the previous evening. These inflammatory symptoms were reduced by topical and general medication, and in one week he was enabled to resume his work. A tumour of small size, however, remained, and this gradually increased, until the 1st of September, when he was obliged to desist from work, on account of the size of the tumour, and the painful and swollen condition of the forearm. Two weeks later, a physician made a small opening into the swelling at its inner side; but nothing more than clotted blood is described to have come away.

On the 2d of November, Messimer came under the care of Professor S. D. Gross, at the Clinic of the Jefferson Medical College. He had lost flesh; his countenance was somewhat pallid and flabby; but, in other respects, his general condition was good, and there had never been any

cancerous disease in his family. The tumour was most marked along the inner aspect of the limb, and extended from five inches above to three inches below the elbow, but the motion of the joint was good, and only embarrassed by the presence of the morbid growth. The swelling was greatest at a point corresponding to the internal condyle, where it measured sixteen inches and a half in circumference, that at the corresponding point of the sound arm being eleven inches. The integuments over the growth were actively inflamed, and preternaturally hot, symptoms simulating an acute abscess; and there was also some pulsation, which was, however, referable to the displaced brachial artery. By an incautious observer, the tumour might, therefore, have been mistaken for an inflamed aneurismal sac. There was, however, no doubt as to the nature of the tumour, as it was characterized by bulk, rapidity of growth, a soft, semi-elastic consistence, a lobular feel, a deceptive sense of fluctuation, a dull, heavy pain, and enlargement of the subcutaneous veins. The forearm was somewhat œdematous, and the fingers were moist and cold.

The patient having been put under the influence of chloroform, an incision was made into the growth, with the effect of giving issue to characteristic encephaloid matter, and clotted blood. The diagnosis, having thus been verified, the limb was removed at the shoulder-joint, and at this date the man is nearly well, the wound having united almost throughout its entire extent.

An examination of the dissected limb discloses an ovoidal, and more or less lobulated tumour, the lower part of which is seated in the triangular space between the supinator radii longus and the pronator radii teres muscles, from which it is easily separable. Above, it extends along the inner side of the arm, and becomes lost in the triceps muscle, with which it is intimately connected. The pronator teres muscle is firmly stretched and displaced by the growth, and its anterior fibres have undergone fatty degeneration. The tendinous portion of the brachialis anticus muscle is secondarily involved, a section of it disclosing the hæmatoid variety of encephaloid. The cyst of the tumour is very distinct, being of a rosaceous hue, and having considerable firmness and thickness. Below, the tumour is well defined, and isolated from the original structures in front of the joint, from which it can easily be separated by the fingers carried around it. Above, the limits of the cyst are not so well marked, involving as it does the inner border of the triceps muscle, which is secondarily affected for five inches above the joint. The median nerve is stretched over the inner side of the growth, and the brachial artery is displaced outwards. Pressure upon the tumour is followed by the escape of pinkish cerebriform material, and clots of blood. Several lymphatic glands along the course of the brachial vessels and nerves were secondarily involved.

In connection with the above specimen, Dr. Gross exhibited a coloured drawing of a similar tumour, occupying the upper limits of the forearm, the cyst of which was well defined. The patient was a gentleman, from Ohio, thirty-five years of age, who underwent amputation of the arm, at its middle, in August, 1865. For upwards of six years, his health remained good, when he died, as was supposed by Professor Lawson, of the Medical College in Ohio, of secondary medullary carcinoma of the lung. A post-mortem examination could not be obtained.

In August, 1867, Professor Gross also amputated at the shoulder-joint, for an encephaloid tumour involving the triceps muscle, from the olecranon process, to half-way up the arm. The patient was a gentleman, 65 years

of age, from the interior of the State. The tendon and the fleshy parts of the muscle were infiltrated with the disease, which probably began in the interfibrillar tissues, from which it gradually encroached on the fleshy fibres, which it displaced, altered, and finally destroyed. In none of these three cases were the bones involved.

Ovariotomy.—Dr. W. W. Keen read for Dr. W. L. ATLEE the following report of a successful case of ovariotomy:—

July 19, 1861. Miss M. G., of West Chester, Pa, aged 16, called upon me with a letter from Dr. W. D. Hartman. She has not menstruated since May, 1860, and dates the commencement of her disease at that time. She was tapped two weeks ago, and is now much larger than a woman at full period. All the characteristics of ovarian dropsy exist. There is a pretty uniform distension of the abdomen, which is occupied by one large cyst, containing a more solid mass in its anterior wall. Fluctuation is distinct. The solid portion of the tumour occupies a central position, extending from a point two inches above the umbilicus, nearly down to the pubes. Upon pressing this portion towards the spine, it carries the walls of the abdomen with it, indicating the existence of parietal adhesions. There is also a feeling of crepitus, resembling the crackling of new leather, over the whole anterior part of the tumour, upon manipulating the abdomen.

On examining per vaginam, the hymen is found to be absent; the uterus is pushed back, the cervix scarcely perceptible, and the os too small to admit the sound. Anterior to the uterus an elastic mass occupies the superior strait and dips down into the pelvis. This is evidently a portion of the abdominal cyst. The cicatrices of the tappings are plainly visible on both sides, beyond the lineæ semilunares. She says that she has heretofore suffered severe pains in the region of the adhesions.

History.—Dr. W. D. Hartman, of West Chester, her physician, sent me the following history of the case after operation:—

"Some time in May, 1860, I was consulted by Mary G., aged 15 years, for an enlargement of the abdomen, which gave her no pain, but she was much troubled with sick stomach and headache. Menstruation had ceased several weeks before, and she attributed its cessation and her subsequent illness to having scrubbed house in her bare feet. She had not menstruated more than five or six times in her life. The periods were regular, but the amount secreted was always scanty, and of a pale colour. Colour florid; possessed of considerable *embonpoint*. Been convinced of the existence of abdominal dropsy; with a view to relieve it various diuretics, cathartics, and alteratives, singly and combined, were successively resorted to. Although the kidneys always responded freely to their action, the accumulation of fluid steadily progressed. This state continuing until December 22d, I was forced to resort to tapping to obtain temporary relief. Owing to a large tumour which had been observed for a long time occupying the region below the umbilicus, a point midway between the anterior-superior spinous process of the ilium and the umbilicus on the left side was chosen at which to make the puncture, and twenty pints of a thick chocolate-coloured fluid were evacuated. The vomiting, constipation, and suffering from pain and distension of the abdomen were immediately relieved, and she was about in a few days. Being now satisfied of the character of the disease, with a view to a last effort, compression of the abdomen, and painting it with the tincture of iodine, and the use of the liq. ferri iod. were tried for a time without any sensible effect. February 8, 1861, I was again compelled to resort to tapping, which was performed on the left side, and about twenty-three pints of fluid were evacuated, of the colour and consistence of thick flaxseed tea. For

some time previous to this operation she had been losing flesh. Medicine had long since been abandoned, and I now looked to occasional puncturing of the cyst as the only temporary relief from the rapidly accumulating fluid.

"On the 7th of April she was again tapped on the left side, when twenty-six pints of fluid were again evacuated, similar in appearance to the last. The tumour had increased to a considerable extent since the last tapping, and gave some trouble.

"She was again tapped May 18 and July 2, on the right side of the abdomen, the size of the tumour interfering with the usual point of puncture at each of these tappings. The fluid measured twenty-nine and a half pints, and had the usual appearance. Previous to the tapping on the 18th of May, her hands, feet, and face were quite œdematous for the first time, but after she was punctured this soon disappeared, and never returned. The patient now began to lose flesh rapidly, and seemed as one doomed to sink from her malady before many months. Although the operation for the relief of her disease, with its attendant risks, had often been mentioned to her, she had always refused to consent to encounter them. After the last tapping, however, at my urgent solicitation she consented to consult Dr. W. L. Atlee, of Philadelphia, with a view to ascertain his opinion of the propriety of an operation, and the following is his reply to my note, containing a brief history of the case:—

"'*Philad., July* 19, 1861. My Dear Doctor: I examined your patient, Miss G., to-day. You are correct in the opinion that this is a case of ovarian tumour. Of course, nothing but extirpation of the cyst will cure her; and if she is willing to encounter the risk of an operation, she is entitled to the chances of it. There are, however, adhesions between the walls of the cyst and the parietes of the abdomen. In anticipation of an operation I would immediately place her on the use of the tinct. ferri chlor. I would advise the extirpation of the mass before again tapping her. Should you prefer not to operate, I will visit West Chester out of charity to the poor girl, and do it with pleasure.'

"Believing that her case was a more favourable one for the operation than usually presented, I encouraged her to submit to it, especially since she could obtain the experienced hand of Dr. Atlee for its performance. After consulting her friends, she assented, and Friday, August 2, was fixed by Dr. Atlee and myself for its performance.

"So rapid, however, had been the accumulation of fluid, that by July 26 I was forced to puncture the cyst for the sixth time, when about twenty pints of fluid were evacuated with difficulty, one-third of the fluid probably remaining. In a day or two she had regained her usual appetite and spirits. It is proper here to remark, that after the fluid had accumulated to a certain extent she would have severe abdominal pains, followed by sickness and vomiting of bilious matters. The pulse was feeble and frequent (135 to 140), with coldness and blueness of the lips and extremities. Upon puncturing the cyst, and evacuating its contents, these symptoms would subside at once."

Operation.—August 2, 1861, at 4 P. M. I met the following gentlemen at the house of the patient in West Chester: Drs. W. D. Hartman, Isaac Thomas, John R. Hoskins, Joshua R. Hayes, Jacob Price, John R. Everhart, Charles L. Seal, W. S. Malany, Samuel H. Harry, John B. Brinton, Daniel G. Brinton, and Messrs. W. B. Brinton, Arthur Ebbs, and W. Lemuel Atlee, medical students. The anæsthetic (two parts sulphuric ether, one part chloroform, liquid measure) having been administered, I made an incision five or six inches long in the linea alba below the umbilicus, penetrating through a thick wall of adipose tissue down into the peritoneal cavity. This exposed the more solid portion of the tumour. Passing my finger between it and the walls of the abdomen, I separated the adhesions in front. The solid mass was now pushed towards the left side as far as possible, to enable me to reach the cyst behind it with the trocar. This I perforated with a long, thick trocar, giving exit to several quarts of thick, tenacious, gelatinous, starch-like fluid, and

filled with heavy flakes of more solid matter. All the contents of the cyst could not be brought through the canula, and the canula itself was finally forced away. This was owing to the cyst being adherent deeply in the right side, and the solid tumour blocking up the incision in front of it, so that it was impossible to rotate the opening in the cyst opposite to the opening in the walls of the abdomen, even with the aid of the vulsellum. This was unfortunate, as it was found afterwards that in detaching the deep-seated adhesions, the remaining contents of the cyst, consisting of the above kind of fluid, flakes and purulent matter escaped into the cavity of the abdomen, and flooded the viscera. The adhesions were separated with difficulty, and were both omental and parietal. After separating them, the whole tumour was gradually drawn out of the abdomen, and was found to be attached to the left side of the uterus by a very wide, thick, vascular pedicle, with the Fallopian tube bordering its extreme left. After crowding the pedicle together the clamp was applied and the tumour secured, leaving a portion of the cyst wall behind as a button to the clamp. The abdominal cavity was now seen, filled with the contents of the cyst, and it required a long time to cleanse it out, particularly the deep cavity of the pelvis, in which also were several clots of blood. This was carefully accomplished with soft sponges. After inspecting the torn vessels at the several points of adhesion, and finding none requiring the ligature, the wound was closed with five interrupted sutures, and dressed as usual.

The viscera generally looked pretty healthy; the intestinal capillaries, however, were engorged. The uterus was small, but healthy; and the other ovary sound. The anæsthetic agent acted admirably; there was not the slightest disturbance of the stomach or diaphragm, and the intestines were perfectly quiet. The patient's lips continued rosy all the time. The pulse did not flag, and was really fuller after than before the operation.

The fluid, when boiled, turned white and thickened, without having its fluidity destroyed. It was covered with a thick scum, and had small white coagula through it.

The tumour consisted of the left ovary. There was one large primary cyst, with a polycystic mass in its anterior wall, weighing altogether 32 pounds—cyst 2½, and fluid 29½ pounds.

August 3, 1 P. M. Dr. Hartman writes:—

"I have just seen our patient; she had some pain in her left groin and back last evening, but rested well after one or two doses of the anodyne. She is cheerful and *hopeful*. Her pulse 100, full and soft; and for the time, I think, she is doing finely."

4*th*, 1 P. M. "Pulse 96, and soft; tongue cleaning at tip and edges; had some pain in bowels last night, which appeared like wind passing through them; secretion from the kidneys is more abundant, and quite clear; pain in the left groin and front of thigh less severe than yesterday."

5*th*, 2 P. M. "Pulse 100, and soft; skin moist; less thirst; distension of abdomen entirely subsided; no pain; complains of feeling hungry."

6*th*, 3 P. M. "Pain in the bowels like flatus; swelling and tension in the right iliac region—otherwise the abdomen is soft, free from tension, and not tympanitic; pulse 112, and weak; skin moist; considerable thirst; tongue clearing; urine abundant, but more highly coloured."

7*th*, 3 P. M. "Pulse 96, and soft; skin pleasant; no thirst; no pain in the abdomen; tongue almost clean; feels hungry."

8*th*, 3 P. M. "Some soreness, tension, and swelling in left iliac region, but no

pain; pulse 96, and soft; skin moist; tongue clean and moist; has had but little thirst for the last two days; says she feels quite smart."

9th, 7½ A. M. "Rested well last night; no pain or uneasiness from flatus since last evening; pulse 88; skin cool; urine abundant and clear; abdomen soft; no tenderness over the abdomen, except in the left iliac region; wound looks well."

10th, 9 A. M. "Rested well last night; pulse 88, and more full; tenderness in the left iliac region almost gone."

11th, 7 P. M. "An enema produced a dark liquid motion; pulse 76, full and soft; feels better to-day than usual."

17th. "Since my last report M. G. has progressed finely. Since the enema was administered her bowels have been moved regularly every day, and she has rested well at night. The wound has almost entirely closed, and there is no pain, soreness, or swelling about the wound. She was allowed to sit up on Monday last for the first time, since which she has been up for the greater part of the day. Her usual ruddy complexion is again reappearing; her general condition seems to be improving."

26th. "M. G. is doing finely; her appetite is good, and she is regaining flesh quite fast."

Aug. 31. Dr. Hartman called to-day to say that Mary had entirely recovered. He says that in May, 1860, she weighed 150 pounds. Now, she weighs 92 pounds, having walked out and weighed herself.

Sept. 12. Mary came to Philadelphia, and called to see me to-day. She is perfectly well. She now weighs 103 pounds. She was at a picnic last week, seven miles from home.

About a year after the operation she came to this city in company with a man with whom she lived as his mistress. She became pregnant by him, and was delivered of a still-born child at nearly full term. Premature labour was produced by his abuse, otherwise she thought she would have carried the child to full term. Soon after this she became a public prostitute, and frequented the lowest dens of the city. Her first admission to the Philadelphia Hospital (Almshouse) was some eighteen months since, in the venereal wards, and she has been three times since an inmate of the medical wards, her last admission being on Sept. 24, 1867. She was then suffering with an attack of typhus fever and the results of debauch and exposure. She died Oct. 9, 1867.

Since the operation menstruation has frequently occurred, but at irregular intervals and in smaller quantity than usual.

During her illness, an examination of the abdomen by Dr. J. Ewing Mears, led to the discovery of the cicatrix, and he kindly called attention to this more than usually interesting case. The facts as to menstruation and the nearly completed pregnancy were obtained from two of her intimate friends in the ward, to whom she had confided these facts, together with the nature and time of the operation and the name of the operator.

Autopsy, Oct. 11, by Dr. W. W. Keen.—When examined externally no discoloration was seen save at the cicatrix, which was quite dark. The adipose tissue of the belly was one inch in thickness, save where the belly walls became exceedingly thin at the cicatrix, the two recti muscles being separated about two and a half inches. On opening the abdomen, no trace of peritonitis of any age was to be seen—not a single adhesion existed at any point. The pedicle was adherent to the cicatrix, and on each side of it the peritoneum was continued to the brim of the pelvis. By means of these two broad attachments, a large number of vessels found their way to the uterus, and the remaining right ovary. The right ovary, Fallopian tube, &c., were healthy, save that a cyst of the size of a pea

existed at one point. The ovary also showed a very marked and recent corpus luteum, probably but a very few days old. The uterus was very much tilted upwards to the left side by the traction of the pedicle. Its neck was greatly elongated. The os uteri was not fissured, and the rugæ on the vagina were still distinct. The specimen is in the Museum of the College of Physicians.

Nov. 28. *Secondary Medullary Carcinoma of the Liver.*—Dr. S. W. GROSS, in presenting this specimen, gave the following account of the case:—

In October, 1866, Dr. S. D. Gross removed from the left labium of a German lady, 46 years of age, a tumour of an apparently fibrous nature, and of the size of a Sicily orange. It was free from pain and discoloration, of a firm, slightly elastic consistence, and of a somewhat pyriform shape, having a small base, which extended to a considerable depth. On section, it displayed a dense, firm tissue; but it was not subjected to microscopical examination, nor was it suspected to be of a malignant nature, although the subsequent history of the case renders it highly probable that it was incipient primary encephaloid of the labium.

After the lapse of four months the lymphatic glands of both groins began to enlarge and become painful, and six weeks subsequently she suffered from pain in the epigastrium. A swelling soon afterwards appeared in this region, and in the middle of June, when she went to the country for the benefit of her general health, it had become quite prominent.

I first saw the patient in the latter part of August, when the glands of both groins had attained the size of a small fist. They were extremely painful; the integuments were discoloured, and the cutaneous vessels were much enlarged. The tumour in the epigastrium and left hypochondrium was very prominent, pushing forwards the ensiform cartilage until it was bent upon itself to nearly a right angle, and rendering the integuments of these regions very tense. The lower border of the mass could be traced at about two inches above the umbilicus, but the extent of the encroachment upon the left hypochondrium could not be determined, as manipulation was productive of great suffering. There was no jaundice; the urine was normal; the bowels regular, and the stools of proper consistence and colour, thus showing that the functions of the liver were not interfered with. The colour of the skin was natural; the woman was pale and emaciated; but the peculiar cancerous cachexia was absent. She never suffered from nausea or vomiting, and her only complaints were increasing debility and pain. The case progressed in this way until the 16th of November, 1867, or thirteen months from the date of excision of the tumour of the labium, when death ensued apparently from sheer exhaustion.

Autopsy, thirty-eight hours after death.—Rigor mortis but slightly marked; body greatly emaciated.

The *liver* was enormously enlarged, and extended deeply into the left hypochondriac region, and downwards five inches below the ensiform cartilage; its entire weight was fourteen pounds. The cancerous deposits were confined almost exclusively to the left lobe. The forms of encephaloid seen in the liver were the tuberoid and infiltration of the hepatic parenchyma. Two isolated masses occupied the right lobe, both of spherical form, and of the size of large walnuts. One was seated superficially on the upper surface of the lobe, and presented at its centre an indentation, in which

the peritoneal covering was opaque and thickened. The other tumour was seated about two inches below the surface. The whole of left lobe was one mass of disease. Very numerous nodules were scattered throughout its entire extent in the periphery, and deeply seated. Some of these were very adherent to the adjoining hepatic structure, while others were more easily detached, and invested by a delicate capsule. The greater part of the parenchyma of this lobe, however, was infiltrated with the disease, and the extra-cancerous tissue had undergone fatty transformation. On incising this lobe, about twenty-four ounces of a dark-brown fluid were discharged, leaving an irregular cavity, which was circumscribed by a membrane of new formation. The peritoneal covering bore marks of inflammation, and the liver was firmly adherent at several points to the diaphragm, as well as to the pyloric extremity of the stomach. The gall-bladder was half filled with bile. Pancreas indurated, apparently from chronic inflammation; the spleen was very small; but the other abdominal viscera were normal. The peritoneal cavity contained nearly a gallon of bloody serum.

The superficial and deeply-seated *lymphatic glands* of both groins were enlarged to the size of a fist, and the integuments covering them on the point of ulceration. The tumour of the left side, in particular, was breaking down, and its interior contained some bloody fluid. The femoral rings were completely occluded by enlarged glands, and the iliac and lumbar glands were very extensively involved, their size varying from that of a pea to that of a pigeon's egg.

The anterior mediastinal glands were also very greatly enlarged, and there was double hydrothorax. The sac of the pericardium contained an ounce of limpid serum; the walls of the heart were fatty, but the lungs presented no abnormal appearances.

Dr. William Pepper, who was kind enough to take charge of the specimens a few hours after their removal, subjected them to *microscopical examination*, with the following results:—

"Examination of the encephaloid deposits in the lymphatic glands, either in the groin or the abdominal cavity, showed very numerous round, clear cells, larger than normal lymphatic gland-cells, with scanty granular contents, and one, or, in a few cases, two round, nucleolated nuclei. The firm solanoid nodule in the right lobe of the liver presented no true fibrous stroma, but contained numerous large connective tissue corpuscles, and many cells of irregular shape and size, with single, large, clear oval nuclei. The huge mass in the left lobe was evidently in an advanced stage of degeneration. The shreddy yellowish lining of the central cavity contained only granular fatty matter, with numerous round, granular corpuscles, resembling pus-cells. Throughout the inner portion of the walls, also, the cells were much shrivelled, and mixed with a great deal of hæmatin and free fatty matter, and many compound granule-cells. In the outer, grayish-pink parts, few evidences of disintegration were present, and many large multi-nucleated cells were observed."

It is interesting in this case to note the mode of propagation of the disease. Commencing as a tumour of the left labium, the cancer-germs were transmitted by the lymphatics to the inguinal glands, and thence along the iliac and lumbar glands to the liver. From the upper surface of the left lobe of the liver, which was the principal seat of the deposit, the lymphatics which pierce the diaphragm near the left lateral ligament carried the encephaloid germs to the glands of the anterior mediastinum, where the progress of the affection was arrested.

Dec. 26. *Head of the Thigh-Bone removed by Excision on account of Gunshot Injury.*—Dr. S. W. GROSS exhibited a specimen of gunshot wound of the head and neck of the left os femoris, which had been removed by operation by Dr. F. H. Gross, of Philadelphia, formerly Surgeon U. S. Volunteers, and Medical Director of the 14th Army Corps. By some strange oversight this operation has not been included among those reported by Assistant-Surgeon Otis, U. S. A., in *Circular No.* 6, S. G. O. Making, as it does, the forty-second authenticated example of this operation, as performed by American surgeons during the late war, Dr. Gross thought that a brief abstract of the history of the case, as furnished by the operator, would prove of interest.

Private Michael Welsh, Co. H., 10th Regt. Ky. Vols., aged 40 years, was struck by a conoidal ball in the region of the left great trochanter, at the battle of Chickamauga, September 20, 1863, and at once conveyed to a field hospital, which soon after fell into the hands of the enemy. Ten days subsequently, he was brought to Chattanooga, Tenn.; and during the period of his captivity the only nourishment that he received was a small portion of corn-meal gruel daily. Having lost his blankets, he also suffered much from cold, and had contracted a rather severe bronchial inflammation. On the 1st of October, he was admitted into the general field hospital of the 14th Army Corps, when a conoidal musket ball was removed from among a mass of small fragments of the neck of the femur, the ball having entered just anterior to the great trochanter. Two days subsequently, Surgeon F. H. Gross carried a curvilinear incision, with its convexity presenting forwards and including the opening made by the ball, from above downwards, and excised the head of the femur along with the attached greater portion of the lower surface of the neck of the bone. Many fragments were removed with the forceps; but as the trochanters were not involved in the injury, the remaining sharp portions of the neck were trimmed off close to the inter-trochanteric lines, which completed the procedure. No ligatures were required; the man bore the operation well; and the limb was placed in a comfortable position.

From the date of the operation up to 20th of October, the man did very well, in spite of his enfeebled condition and bronchial trouble, when the discharge from the wound became sanious. On the same night he had a chill, and was delirious, and the pulse was very feeble and frequent. On the 25th inst., his condition is thus described: "Pulse 125 and very feeble; tongue dry and red; had a natural alvine evacuation. At 9 A. M., hemorrhage recurred from the wound, which was arrested by injecting a solution of subsulphate of iron. Stimulants freely administered, but the man grew more and more feeble, and expired at 2 P. M."

No post-mortem examination was held, but death was evidently due to pyæmia. The specimen shows that about one-fifth of the head, at its upper aspect, has been shot away, together with the entire upper surface of the neck, about one-half of the anterior and posterior surfaces and the lower border of the neck remaining.

In commenting upon this case, Dr. S. W. Gross made the following remarks upon the operation of excision of the head of the thigh-bone in army practice:—

"In a review entitled 'Military Surgery,' which I contributed to the *American Journal of the Medical Sciences* for Oct. 1867, I gave the statistics of 43 excisions of the hip-joint for gunshot injury. Since the

appearance of that paper, I have collected 15 additional examples of this operation, thus bringing up the number to 58, which comprises all the authenticated and finished cases that have been reported up to the present date. 42 operations were practised by American surgeons; 9 by German surgeons; 6 by English surgeons; and 1 by a French surgeon.

"Of these 58 cases, 7 recovered, and 51 died, thus affording a mortality of 87.93 per cent. As far as can be ascertained, 13 operations were primary, with 12 deaths, and 30 were secondary, with 26 deaths; and in 15 the precise date of operation is uncertain, but of these 13 were fatal. The results of the procedure in army surgery may, therefore, be thus expressed:—

	Per cent.
Mortality of all excisions of the head of the femur . .	87.93
" primary " " " " " . .	92.30
" secondary " " " " " . .	86.66

"Death followed in 21 from exhaustion, in 6 from pyæmia, in 3 from secondary hemorrhage, in 1 from the shock of the operation, in 1 from hectic, in 1 from internal hemorrhage, in 1 from gangrene, in 1 from acute peritonitis, in 1 from colliquative diarrhœa, in 1 from cholera, and in 14 from an unknown cause.

"Although the discussion of therapeutics and operations may be somewhat out of place in this Society, I am yet impelled to bring before it certain statistics of amputations at the hip-joint which may be of service in estimating the comparative advantages of excision and disarticulation for gunshot injuries of the head and neck of the thigh-bone. In the paper already alluded to I tabulated 137 hip-joint amputations, and have since collected 29 additional cases, thereby increasing the number to 166. Of these, 53, with 9 recoveries, were performed by American surgeons during our late war.

"Of these 166 operations, 24 recovered, and 142 died, thus affording a percentage of mortality of 85.54. 68 were primary, with 3 recoveries; 71 were secondary, with 17 recoveries; and in the remaining 27 cases the time of operation could not be ascertained, but of these 4 were cures. The results of the operation in army surgery may, therefore, be expressed as follows:—

	Per cent.
Mortality of all amputations at the hip-joint . . .	85.54
" primary " " " . . .	95.58
" secondary " " " . . .	76.05

"A comparison of these statements shows that excision of the hip-joint is attended with greater risk to life than disarticulation at the joint. Primary excision is 3 per cent. less fatal than primary amputation; but secondary excision is 10 per cent. more unfavourable than secondary disarticulation. Regarding, then, the operative treatment of gunshot fractures of the head and neck of the thigh-bone, from a statistical point of view, the chance of saving the patient is manifestly on the side of secondary amputation, the mortality of the procedure being 16.25 per cent. less than that of primary excision; 10.61 per cent. less than that of secondary excision, and 19.53 per cent. less than that of primary amputation."

ART. XIII.—*Proceedings of the Clinico-Pathological Society of Washington, D. C.*

1866. *January* 13. *Gonorrhœa Complicated with Urethral Chancre.*—The following case of this was reported by Dr. S. J. TODD:—

On the 23d of January, 1865, I was consulted in my office by Mr. A——, an Englishman, æt. 27, married, and printer by trade, for an attack of gonorrhœa of two weeks' standing. Had been under no regular treatment, but had taken mixtures containing copaiba, cubebs, &c., and had used injections, but without benefit. On examination all the symptoms of gonorrhœa were found, but no abrasion or lesion existed on the glans or prepuce. Ordered saline cathartic, rest in the horizontal position, and a low diet. Before leaving he told me he thought he had given the disease to his wife, as he had had connection with her before he knew the nature of his complaint. 24th. No pain in micturition; prescribed copaiba in capsules, as his stomach was irritable. Says his wife has a discharge, and complains of heat and burning when she voids her urine. She refused to be examined or to consult a physician, but took the same medicine as her husband throughout the treatment. Both cases were apparently doing well, when, on the 22d of February, three weeks from the time he first came under my notice, and five weeks after the impure intercourse, he called my attention to a bubo situated in the right groin; the glands in the left being indurated and enlarged; the discharge was less copious and more watery. He assured me that he had not had intercourse with any female since he had been under my charge, nor had he ever had any venereal disease; which statements I believed, for he had been confined to his room most of the time on account of the severity of the symptoms, and no cicatrix or any evidences of a previously existing ulcer could be found. I considered the bubo as sympathetic, and advised the external use of the tincture of iodine and absolute quiet. At the next visit, in examining carefully the preputial folds, for I still suspected the presence of an ulcer, I noticed a hard, firm tumour, the size of a bean, in the urethra, about an inch and three-quarters from the meatus. I concluded I had found a urethral chancre which was the cause of the indolent bubo and the indurated ganglia, and prescribed a mercurial plan of treatment. On the 25th of February my diagnosis was confirmed, for a syphilitic erythema made its appearance on the upper part of the body, particularly well marked on the palmar surface of the forearms and at the bend of the elbows. He informed me his wife had induration of the inguinal glands and swellings behind her ears. The history of this case ceases at this point, as the patient was suddenly called from the city, and I have not heard of him since.

March 10. *Pseudo-Membranous Croup, and a Case of Diphtheria, with Tracheotomy.*—Dr. D. W. PRENTISS reported the following cases:—

January 27th, 1866, I was called to see the child of Mr. K., a little girl one year old. At this date she had all the symptoms of ordinary catarrh, with an exacerbation of fever each morning. The fauces and pharynx were slightly red, and a very little swollen, but there was neither difficulty in breathing nor swallowing. She had had whooping-cough during the winter, the remains of which still lingered, two or three mild paroxysms occurring in the course of twenty-four hours, one of which

seized her during my visit, so that I had an opportunity of noticing that the cough had not the hoarse, ringing sound of croup. Ordered an expectorant, containing a small quantity of hydrocyanic acid.

On the following day the patient was not so well; had had an attack of dyspnœa during the night, and, at the time of visit, some difficulty of breathing still remained. The throat was about in the same condition as the day previous, perhaps a little more swollen; no appearance of false membrane. Attempted to auscultate the chest, but failed on account of the child's cries and struggles. No febrile disturbance or loss of appetite. Fearing diphtheria, which was prevailing, tincture of chloride of iron, and chlorate of potash were added to the prescription.

January 29th, patient worse, the dyspnœa being more marked than yesterday, with "croupy" cough; the distress constant, the child no longer showing interest in its playthings; thirst urgent; pulse quick, but not feeble; tongue clean at edges, and coated with white fur in centre and far back; appetite apparently good, and swallowing unimpaired, although she cannot take the breast on account of the nostril being occluded by mucus. Throat about the same; no false membrane visible. Ordered emetic of compound syrup of squill ℥ss doses every two hours until dyspnœa is relieved. Iron and potash mixture continued.

January 30th, condition of patient worse in every respect. Had a decided "attack of croup" during the night; breathing loud and snoring; head thrown back, and chest forward, to assist in respiration; child drowsy, and expression of face anxious. No false membrane on fauces or tonsils. The first dose of compound syrup of squill produced vomiting, with temporary relief; subsequent doses only induced nausea. Ordered iron mixture to be discontinued. To be taken every fifteen minutes until free emesis, one-eighth grain tartar emetic; one-sixth grain of calomel every two hours, and flannel band around abdomen, on which to be rubbed ℥j mercurial ointment. At evening visit patient still worse; tartar emetic had not produced emesis, although two grains were taken; the calomel had caused free bilious stools. The dyspnœa was now more distressing, and the whole condition less favourable than in the morning. I administered ¼ gr. doses of tartar emetic at short intervals, remaining myself to watch the effect; but no vomiting followed. Next ℥j doses of powdered alum in molasses every fifteen minutes until four doses were taken, causing slight emesis. This seemed to give relief, and orders were left to repeat if necessary.

January 31st (2 o'clock A. M.), was called up in the night on account of a more severe attack of dyspnœa than any preceding. By the time of my arrival it had passed over, but she was evidently worse than before. The alum had been repeated without any effect. Sulphate of zinc was ordered every half hour, in 10-grain doses, with the hope of dislodging the false membrane.

12 o'clock M. no change for the better; the sulphate of zinc failed to act after the first dose. On examining the throat, patches of false membrane were discovered for the first time. The dyspnœa had increased to such an extent that the child's whole attention was occupied with the function of respiration. Ordered permanganate of potash in solution internally, and apply locally a strong solution of nitrate of silver (40 grs. to f ℥j). Sulphate of copper in 1-grain doses was given as emetic, and a blister 2½ by 1 inch applied to front of larynx. Wine and beef-tea to support the strength, which had not until now begun to flag.

From this date, January 31st, the patient continued steadily to grow worse, until February 3d, when a convulsion occurred; another took place during the night—the forerunner of death, which closed the scene on the morning of the 4th. On the evening of the 3d, however, at the request of the family, another physician was called in consultation, and by his advice ten grains of turpeth mineral (sulphate of mercury) were ordered in four doses, all of which were administered without effect.

Three points connected with this case are interesting and worthy of notice, viz: 1. The obscurity of the diagnosis; 2. The insusceptibility of the patient to the action of remedies; and, 3. The steady approach of the fatal result. In regard to the first of these it will be noticed that *membranous croup* was diagnosed, and also that three days elapsed before a definite opinion was formed. The diagnosis between *diphtheria* and *pseudo-membranous croup* would seem to be simple enough, if text-books are taken as the guide, and so indeed it *may* be, if well-marked cases of each are before the observer. But when rules come to be applied to *practice*, where every gradation, from well-defined examples of either down to cases in which both seem intimately blended, is found, it is a matter which requires careful thought and some experience to determine the true character of the disease, and apply the proper remedy. In the case under consideration, the previous existence of *pertussis*, the remains of which still lingered, complicated the diagnosis in the commencement, for an intercurrent attack of catarrh is by no means unusual in this latter affection. The dyspnœa, also, occurring the night after the first visit, and the slight redness of the fauces noticed the next morning, might naturally have been attributed to the same cause. The peculiar hoarse cough, however, did not occur until the third day, when, for the first time, signs of constitutional disturbance began to manifest themselves. This condition continuing to grow worse, false membrane was discovered upon the tonsils and fauces on the fifth day; but still there was no flagging of the pulse, no prostration of the strength, and but little loss of appetite. The insufficient aëration of the blood, in consequence of the obstruction to the air-passages, now began to produce its legitimate results. The pulse became very frequent and feeble, the face dusky and somewhat swollen, the skin hot and pungent, the mind dull, and the whole system prostrated. The patient's condition was precisely similar to that of the one on which tracheotomy was performed for *diphtheria*, to which reference will be presently made. Up to the fifth day, then, the case bore, in a marked degree, the impress of *true croup;* after that day, it had emphatically all the characteristics of a bad case of diphtheria. The value of this latter fact, in relation to the original diagnosis, is a very important consideration: Whether the blood-poison, from a want of proper respiration, furnishes sufficient explanation of the change in the form of the disease towards the last; or whether it is necessary to suppose a specific blood-poison, as is acknowledged to exist in diphtheria, to account for the almost identity of the advanced stages of the two diseases in question. The former of these hypotheses accords with the generally received opinion that the diseases are essentially distinct; while the latter hypothesis, if accepted, favours Trousseau's views, that the affections known as *pseudo-membranous croup* and *diphtheria* are one and the same. The discussion of the different views are left open to the Society.

The second point that has been mentioned as interesting, is the insusceptibility of the patient to the action of remedies. In regard to this, it is

only wished to record the fact. The medicines given to produce emesis were finally increased to the full dose for adults without having any effect. The wine and beef-tea were administered with no better result; the calomel only acted on the liver and bowels.

The third point, namely, the steady approach of the fatal result, seems to depend somewhat upon the facts last stated, for we know how little hope there is in a disease with such slight tendency to favourable termination as *pseudo-membranous* croup, if the case be seen so late that remedial agents cease to produce their legitimate results. The same principle applies, whether the patient be seen late or early, if our therapeutics prove to be of no avail. In this instance, the change for the worse was perceptible day by day—and, indeed, one might say, hour by hour; the unfavourable progress was so regular in its course.

As regards the treatment pursued but little need be said; it was such as seemed to be indicated by the nature of the disease and the symptoms. The *blister* was applied as a last resort, when all else seemed to fail, and apparently, for a few hours, gave more relief than any other remedy used. We are aware of the objections to blisters in young children, but where life is in immediate danger, we can afford to anticipate some trouble in the healing, if the *life* is only preserved.

One other point remains to be noticed in connection with the treatment, and that is *tracheotomy*. Why was this not performed? For three reasons, viz: 1. The disease had extended into the bronchial tubes; 2. The age of the child; and, 3. The seeming barbarity of the operation on a helpless infant already doomed to death. In narrating symptoms, an attempt and failure to auscultate the chest at the first visit was mentioned; as the affection advanced, however, and the little patient became listless, this was accomplished, and the larger bronchi found obstructed, and the lungs congested. The chance of success from opening the trachea, in this state of things, was very small.

Of the second reason—this child was just one year old. Referring to this point in his late work, entitled *Medical Clinic of the Hôtel Dieu*, Trousseau says: "It (tracheotomy) is less likely to prove successful in adults than in children, for reasons already given; *in infants it offers but little chance for saving life; the author has seen but two successful cases under two years of age—one at thirteen months, and the other at only six days less than two years.*" This comes from a physician who has performed the operation in this disease and diphtheria more than two hundred times, with success in more than one-fourth the cases.

As to the third reason, it is not one which should deter us where there is a reasonable hope of success, but only a circumstance that may very properly have its influence in determining the question when it is of doubtful propriety.

Diphtheria and Tracheotomy.—I was called by Dr. N. S. Lincoln, on the 30th of November, 1865, to assist in performing tracheotomy in a case of diphtheria. The patient, a boy aged six years, of delicate constitution, had been taken sick November 24, with slight sore-throat; but the physician was not sent for until the 26th, when diphtheria was developed. The treatment of tincture of chloride of iron, chlorate of potash, and permanganate of potash, was ordered with no apparent good effect. The constitutional disturbance became more marked; the diphtheritic membrane increased, and extended downwards; and the respiration became seriously impaired. The patient continued to grow worse until the after-

noon of November 30, when suffocation was imminent, and it was determined to operate for the possible chance of prolonging life until nature could throw off the disease. The case was explained to the family, and, with their consent, Dr. L. operated at half-past four o'clock P. M. An incision, about two inches in length, was made in the median line downwards from the larynx, the skin dissected back, the muscles separated by the handle of the scalpel, and the trachea exposed just below the cricoid cartilage. A very free flow of dark-coloured blood followed a slight incision to enlarge the wound, apparently coming from the thyroid body. It was controlled by a ligature. A circular piece of the tracheal ring was cut out, and the wound kept open by wire hooks attached to an elastic band passing around the neck. A piece of false membrane was extracted from the opening, and the operation was complete. Relief was instantaneous; the breathing became gentle and natural; the sense of suffocation and distress was gone, and the patient dropped into a quiet sleep. A gauze veil was thrown over the opening, and the patient returned to bed. The amount of blood lost was about two ounces. The breathing continued good for three hours, when mucus accumulating in the air-passages, excited a troublesome cough. At 3 o'clock A. M. the physical signs of pneumonia were developed, the dyspnœa again became marked, and the little sufferer died at 4 o'clock P. M. the same day—twenty-four hours after the operation was performed.

The reason of the operation not proving successful was self-evident—the membranous deposit extended down the trachea below the point opened, and also probably into the bronchi. The development of pneumonia is the most common complication of this disease, and was therefore not unlooked for; but remedial agents were of no avail.

It is an interesting question in this case, whether if the operation had been performed earlier, the result might not have been more favourable? Also whether it would have been justifiable so long as any hope of relief, by less heroic measures, remained?

During the discussion which followed the reading of the case, Dr. Wm. Lee mentioned a case of tracheotomy for croup which came under his observation at Smallpox Hospital, Blackwell's Island, New York. Child, eighteen months' old, was placed, after the operation, in a closed bed, where the atmosphere was kept moist by a jet of steam. Patient lived three days, and was in a fair way to recover, when, by an accident, the bed was set on fire, and the child had to be removed to a cold room, which proved fatal.

Dr. H. P. Middleton, speaking of the insusceptibility of the first of these patients to the action of remedies, called attention to the same fact, as characterizing the case previously reported by himself to the Society. (*Proc. Clinico-Path. Soc. of Washington, D. C., Am. Journ. of Med. Sciences*, Jan. 1868.)

May 5. *On the Causes of Alopecia and of its Greater Frequency in Males than Females.*—Dr. A. F. A. KING, after referring to the statement of Wilson (*On Diseases of the Skin*, 3d edit., pp. 608, 609) that the cause of alopecia occurring in persons of advanced years was to be "sought for in an impediment to circulation through the textures of the scalp of the upper part of the head," presented some remarks endeavouring to establish the proposition *that the impediment to the circulation* referred to *was due to compression—either partial or complete—of the arteries supplying*

the scalp by pressure of tight-fitting hats. The vessels were compressed, and, consequently, the amount of blood flowing through them diminished by the impinging of a hard hat-rim upon the resisting protuberances of the cranium.

In support of this proposition Dr. King mainly relied upon the greater frequency with which the disease occurred in males than females, hats being worn as a general rule only by the former. Those worn by women did not come low enough on the sides of the head to compress the arteries, but rather rested on the top secured by strings. Moreover, men being more in the open air wore their hats during a longer period than females. If the idea of Wilson was correct that this difference between the sexes depended upon a larger quantity of adipose tissue being situated beneath the integument of the scalp in the female, whereby a more easy and unimpeded transit was afforded for the minute vessels to the capillary plexus of the derma, it might still be a question whether the extra amount of fat *itself* in women was not dependent upon the same freedom of circulation in the scalp which secured them a better supply of hair.

Dr. K. next referred to Fig. 209 of *Gray's Anatomy* (2d Am. edit., p. 374), and showed how a line drawn across it, representing the hat-rim, would strike the branches of the anterior temporal arteries over the frontal protuberances, the region where the hat pressure was most severe. It would also compress the posterior temporals at or near the parietal ridges, and the occipitals in the same way behind. The reason why baldness occurred in different localities in different individuals was, probably, due to a difference in the shape of the head. A long skull, where the hat pressure would be most exerted on the forehead (and, consequently, on the anterior temporal arteries) and occiput, would lose its hair soonest from the top and anterior portion; and, probably, also to some extent low down behind from pressure of the occipital artery. This last vessel, however, does not contribute very much to the circulation on the top of the scalp. When a patch of baldness exists about the vertex we might expect to find a *wide* head, the posterior temporal arteries, which supply the locality referred to, being compressed against the parietal bones. The little tuft or island of hair so often observed, left by itself on the top of the forehead, was nourished by the two supra-orbital arteries, these vessels having escaped hat pressure by passing over the forehead in the slight concavity between the two frontal eminences.

To say that the pressure of a tight-fitting hat exerts *no* influence upon capillary circulation in the scalp is unreasonable. In the absence of a bandage, in a case of hemorrhage from a wounded branch of the temporal artery, how could we better arrest the bleeding than by placing on the patient a close-fitting hat, a compress being adjusted under its rim immediately over the trunk of the vessel!

Below the hat-rim, where the circulation is not impeded, we invariably find the hair to remain good, though the top of the head may, at the same time, be entirely bald.

In many cases of alopecia where all recognized causes of the disease are from the circumstances of the case excluded, there is no other plausible way of accounting for the disease than by the deranged circulation occasioned by pressure upon the arteries.

In conclusion, Dr. K. recommended as a prophylactic measure the manufacture of hats made so as to embrace the head at points or surfaces where

no considerable vessel would be compressed, or hats made to order for each individual might be arranged with a notch or semi-circular concavity in the rim over the spot of skin under which the artery passed.

If the anatomy of the part was explained to intelligent hat-makers, it is probable some one of them might devise a modification of the present form of hat which would be less destructive to the hair.

The cost of such an innovation to consumers would hardly exceed that annually expended in the purchase of quack nostrums in the form of "hair restoratives."

May 12. *Hemorrhage following Abortion, treated by Injections of Persulphate of Iron into the Cavity of the Uterus.*—Dr. C. M. FORD related the following case:—

Mrs. F., Irish, aged 28, plethoric habit; had a miscarriage at three months on the night of March 23. Saw her for the first time the next morning, when the following symptoms were presented: Face pale; pulse 120, and weak; tongue very pale; extremities cold; complains of severe pain in the back; no urine passed for twenty-four hours; bowels had been opened during night. Digital examination discovered the vagina to be filled with coagula; os uteri dilated sufficiently to admit index finger; placenta found still adherent to uterine walls, but could not be detached. The flooding, which still continued, had commenced twenty-four hours previously, and had now reduced the patient to a dangerous condition of debility. Drachm doses of tincture of ergot were administered, and cold applications made locally. This failing to control the hemorrhage, the tampon was applied, and stimulants ordered. At 3 o'clock P. M. the flooding was still considerable, notwithstanding the presence of the tampon; this latter was therefore removed, and the os uteri being found more dilated, the hand was introduced, and the most of the placenta removed—a small portion only, which could not be reached, remaining in the fundus. The pulse was now hardly perceptible. Ordered brandy and laudanum freely. The hemorrhage again commencing, a solution of one drachm of persulphate of iron to four ounces of water, was injected into the uterus through the long leaden tube belonging to Tiemann's universal syringe. The hemorrhage was immediately arrested, and did not again return. The remaining portion of the placenta came away without difficulty on the 27th, and convalescence was quickly established.

NOTE.—*Jan.* 1, 1868, Dr. Ford has treated three cases of uterine hemorrhage with astringent injections since reporting the above case. In two instances the flooding followed abortion; in the third, the trouble was menorrhagia. Solution of tincture of perchloride of iron, of the strength of f℥j to f℥iij of water, was employed instead of solution of persulphate, and in each case with the same encouraging result.

REVIEWS.

ART. XIV.—*Obstetric Clinic; a Practical Contribution to the Study of Obstetrics and the Diseases of Women and Children.* By GEORGE T. ELLIOT, Jr., A. M., M. D., Professor of Obstetrics and the Diseases of Women in the Bellevue Hospital Medical College, Physician to Bellevue Hospital and to the New York Lying-in Asylum, &c. 8vo. pp. 458. New York: D. Appleton & Co., 1868.

THIS may be said to belong to a class of books which are "after the practitioner's own heart." In them he finds a wider range of cases than comes under his observation in ordinary practice; in them he learns the application of the most recent improvements of his art; in them he finds the counterpart of cases which have caused him the deepest anxiety; in them, too, he may find consolation, for the regret—the offspring of limited experience, which has always cast a shadow on the remembrance of some of his fatal cases—will pass away as he reads of similar ones in which far greater resources of every kind failed to avert a fatal termination.

There are not many books of this kind in our language; they can probably all be numbered on the fingers of a single hand. Among the best of the kind are the *Clinical Observations in Midwifery* of the elder Ramsbotham, and the *Difficult Parturition* of J. Hall Davis; the former, now out of date in regard to some points, but in its day a most excellent work, as the latter is now, and both will serve as models and examples of what such works should be. In these works principles are plainly laid down and doctrines briefly stated, to which cases are appended illustrative of each; or, reversing the order, the cases are first detailed, and a commentary presents the theory.

We think, then, that Dr. Elliot has been exceedingly happy in his choice of a subject, entering a field but little worked, and one of great practical value. His opportunities and position have been and are such as to enable him to do justice to the subject; the cases which make up the bulk of the work have been selected from among the most interesting occurring during fourteen years' service in Bellevue Hospital; and the resources of private practice have not been neglected. The *motive* of the book, too, as set forth in the preface, is an honourable one, and furnishes an example which ought to be generally followed: "The work is presented as a partial discharge of the debt due to the profession by all who enjoy hospital advantages; and in grateful recognition of the benefits which the author has derived from the recorded experience of others."

Many circumstances concur, therefore, to influence us to extend to this work a cheerful welcome, and to commend it as fully as possible. We *do* thus welcome it; as the production of a gentleman of great experience, acknowledged ability, and high position—as an emanation from one of the leading schools of our country, and as an honourable addition to our national medical literature. But these very points of authorship and science challenge a close examination as to the merits of the work, and our

duty to the profession as journalists imperatively requires an unbiassed judgment as to the manner in which Dr. Elliot has performed his self-imposed task. Our office would be far pleasanter could we follow the bent of our inclinations, and write nothing but what is favourable; yet unqualified praise, however gratifying to the feelings of an author, can justly be awarded to but few productions in any department of literature, and has unfortunately become so common as to awaken suspicion in regard to a book rather than to insure its success. If, therefore, in addition to much praise, which we can honestly give this work, we have some fault to find with it—and although we think that Dr. Elliot has in many respects fallen short of what he might have done with the same materials—we will endeavour not to be unjust or hypercritical, having no motive for either, and no feeling towards the author but those of high respect for his talents and attainments.

The work opens with cases and remarks upon one of the most important subjects of obstetrical medicine. The first three chapters, covering one hundred and twenty-six pages, are devoted to Puerperal Convulsions. And the subject is no less interesting than important—markedly so on account of the recognition, within very recent times, of certain interesting facts and symptoms relating to it, but especially so on account of the great variety of opinion and wide divergence of views upon almost every point connected with it, whether etiological, pathological, or therapeutical. Indeed, we do not believe there is another disease to which humanity is subject—unless, possibly, we except cholera—upon which so widely different and even diametrically opposing doctrines are taught by equally high authority. There is no little danger, from this want of harmony, that to the young man—who, leaving the text-book of his pupilage to study the subject in a wider range—will come skepticism instead of wisdom, and confusion instead of clearness of understanding.

The great causes of embarrassment to the student of this subject are a failure upon the part of writers to classify puerperal convulsions, and the lack of harmony among them as to the pathology of the disease. With some the convulsions of parturient women are hysterical, apoplectic, and epileptic; with others, simple, epileptiform, and epileptic, with numerous other divisions; with many there is no clearly marked line drawn between cases, and the fact that they are held to be of different nature is rather to be inferred than stated; the majority, perhaps, are careful to point out that the disease is not always the same, while by others again this is denied, and its unvarying unity stoutly maintained.[1] No error, we believe, can be greater than this; nothing, we think, should be more constantly kept before the mind of the student than that puerperal convulsions are *not* always the same—that, like dropsy, for instance, each case must be analyzed and its pathological cause determined; and that if the task be not always possible, in proportion as the rule is followed will an approach be made to scientific practice, and successful treatment be probable. From neglect of this has resulted much of the clash of testimony as to the value of certain remedies and certain modes of treatment.

Now, we are sorry to say that the work of Dr. Elliot is lacking in this important feature. There is no arrangement of the cases into groups, no attempt to furnish a clue to the intricacies of the known, or an index to

[1] "L'eclampsie est une affection toujours identique à elle même."—Joulin, *Traité complet d'Accouchements*, p. 1144. Paris, 1867.

point the direction in which progress will probably be made in the unknown. The slightest classification which could be made—one which, we feel compelled to say, could hardly escape being made—is that which is purely clinical in nature, dividing convulsions into those occurring before, during, and after labour; the latter especially divided from the others by some sharp therapeutical lines. But we have not even this; cases follow one another without any reference to time of occurrence, in regard to labour, and without any indication of a difference in nature. In one place we find a faintly expressed recognition of the fact that puerperal convulsions are not all alike:—

"*Varieties of Puerperal Convulsions.*—We need a term to distinguish such convulsions in a puerperal state as are general in character, with total abolition of consciousness, from those which are more or less incomplete, and of less dangerous significance. Hence the term eclampsia is as good as any other for the former, and the latter can be assigned to their special causes, so far as these are understood." (p. 56.)

Then follows a case, unique in the experience of the author, which has "hysteria" in every line of it, although it is not called hysterical, and we only infer that it is so considered by the author because it is followed by another case which "illustrates the severe hysterical type of convulsions, though not occurring in the puerperal state." We propose a modification of Dr. Elliot's paragraph so as to make it read: "We need a term to distinguish such convulsions in a puerperal state *that are unaccompanied by albuminous urine from those that are accompanied by it.*"[1] There *is* a difficulty of language here; the disease is "puerperal," because occurring in the parturient woman, but by "puerperal convulsion" is generally understood those having an uræmic origin. The suggestion of the author to restrict the term "eclampsia" to the latter, is a good one, and we wish it could be generally followed; we shall use the word "eclampsia" in this article only as referring to puerperal convulsions attended by albuminuria. But we think it pertinent to inquire why the author, having thus far recognized a class of cases "of less dangerous significance," did not say something more concerning them, especially since he details two other cases (30 and 39) in which the urine presented no traces of albumen. The recognition of this class, and its marked separation from eclamptic cases, we hold to be of the first importance—the first step necessary in clearing the ground for the student.

The records of obstetrical medicine contain many of them; as most readily accessible, we may refer to the case arising from repletion and indigestible food, given by Bedford,[2] and the cases of Dr. Ingleby and F. H. Ramsbotham,[3] where direct irritation of the uterus was the cause, the seizures following in both cases immediately upon introduction of the hand to remove the placenta. Other causes of these "simple" convulsions of some authors are distended bladder, loaded rectum, and they may have a purely psychical origin. But all these and other causes do not give rise to a large class of cases; how infrequent they are may be judged from the fact that their existence is denied by some, that Cazeaux mentions but

[1] "Finally, the observation of our patient, and other facts of which I have been witness, are in formal opposition to the law which it has been attempted to lay down, that in all women attacked by eclampsia the urine is albuminous."—Trousseau, *Clinique Médicale*, t. ii. p. 140.

[2] The Principles and Practice of Obstetrics, p. 488. New York, 1868.

[3] Obstetrics. By Tyler Smith. Am. ed., p. 609.

two, while only three have occurred to the author, and another gentleman, of large experience in the same city, has never met with a case.[1]

A complete classification of the subject would require the consideration of an "epileptic" form, distinguished as attacks of epilepsy during labour of those subject to this disease. But these are rare, for epileptics are not especially prone to seizures during parturition (*Elliot*, p. 128). In this our author agrees with other authorities. Also the "apoplectic" puerperal convulsion has always been recognized, a form in which coma preponderates over motor disturbance, and which too frequently can only be distinguished by an examination after death.

These, however, we will not here consider, but pass on to those which are accompanied by albuminuria, "eclampsia," and they by far outnumber all the others combined. But this class, again, is not composed of cases identical in character. In the majority of cases as soon as the pregnancy terminates the dropsy disappears, albumen is no longer to be found in the urine, and the patient returns to a state of perfect health. In the others, although the more prominent and distressing symptoms may subside, evidences of disease of the kidneys persist, and sooner or later a fatal termination ensues. In the one the albuminuria is dependent upon pregnancy, and may be termed "simple albuminuria," in the other it has its origin in organic disease of the kidney, the so-called Bright's disease. A recognition of these sub-classes we hold then to be of the very first importance, not only in the study of the disease but especially in practice where the prognosis, both to mother and child, depends greatly upon a differential diagnosis between the two. In this respect then we are again compelled to say that we find this work lacking; not only are the cases not grouped in reference to any such view of their pathological difference, but we do not gather any intimation that such a distinction may be advantageously made, or even that it has been made. Yet the later and best writers upon the subject draw the line between these kinds of eclampsia very plainly, and teach that in doing so we are advancing another step towards a better understanding of much that yet remains unknown.[2]

Can these cases be distinguished during their progress? Is there any means of telling whether the albuminuria of a pregnant patient is simply the result of pregnancy, or whether it is but a symptom of organic disease of the kidney? If these questions cannot be answered affirmatively, then

[1] A Lecture on Puerperal Convulsions. By T. Gaillard Thomas. N. Y. Medical Record, Feb. 1, 1867.

[2] "I have now to point out an error into which people are very liable to fall, namely, to look upon the albuminuria of pregnancy and pregnancy with albuminuria as one and the same thing, while in reality they are perfectly distinct. When we speak of the albuminuria of pregnancy we mean that the pregnant state induced the albuminuria, whereas when we speak of pregnancy with albuminuria we simply mean that a woman during the period of her pregnancy has been attacked with kidney disease.

"I have now to call attention to a third form of albuminuria and pregnancy, namely, that in which a patient already the subject of kidney disease becomes pregnant."—Harley, A Course of Lectures on the Urine and Diseases of the Urinary Organs, *Med. Times and Gaz.*, Dec. 16, 1865.

See also Basham on Dropsy and its Connection with Diseases of the Kidneys, etc. etc., p. 232. London, 1866.

Roberts, A Practical Treatise on Urinary and Renal Diseases, pp. 293–4. Philadelphia, 1866.

Tanner, too, makes the distinction between these two forms of the disease. On the Signs and Diseases of Pregnancy, p. 427. Philadelphia, 1868.

time spent upon this distinction of cases is time wasted. If they can be, it behooves the practitioner to be aware of the fact and acquainted with the means, for treatment[1] depends greatly, prognosis almost entirely, upon the differential diagnosis. Dr. Elliot says they cannot be distinguished. We italicize a portion of the following paragraph.

"It is, however, very gratifying to remember that the urine of pregnancy may present *all those varieties and numbers of casts which are recognized in every stage of Bright's disease*, but that, after a fortunate labour, these conditions may disappear entirely, and the patient remain as well as those who have presented similar appearances after scarlatina and other acute diseases." (p. 12.)

Authorities are against the author. Frerichs looks upon casts as pathognomonic of Bright's disease. Dr. Harley relies upon the microscope and expresses no want of confidence in the aid it furnishes. Dr. Basham[2] says "a microscopic examination of the urinary sediment will promply decide the point." Dr. Roberts[3] in addition to the microscopic appearances gives a train of symptoms which tell strongly in favour of each form of the disease.

It certainly cannot be requiring too much of an author when he advances doctrines or makes statements not in accordance with those of others equally high in standing and equally competent to observe and reflect that he should give the individual facts bearing upon the question with minuteness and care, and attested by other witnesses. But the author has not taken the pains to group together the cases which illustrate this point, and to impress their importance in reference to so momentous a question as this, and we are therefore left with the general statement above quoted against the testimony of many other authorities. In the detail of all his cases of Bright's disease the results of microscopic examinations conducted by such men as Flint, Jr., Draper, and Alonzo Clark, are carefully given, but we look in vain for any information as to what bearing the presence or absence of "hyaline casts" and "granular casts" have upon the case. Of course the author is aware of their importance in every respect, but in assuming that his readers are as well acquainted with it as himself he has made a most unfortunate assumption for a book of instruction.

We are compelled to note, next, an entire absence of any notice of the most interesting and important pathological questions relating to this subject. We expected to find them, or some of them at least, in his statement of the "relations of albuminuria to pregnancy," arranged under seven heads. (pp. 10–11.) But we are not told that the author has learned anything from his extensive clinical experience as to whether the origin of the disease is urea in the blood, or whether under the influence of a ferment it is changed into carbonate of ammonia, and if so, what that unknown ferment probably is; he does not explicitly state whether he is an adherent of the "toxæmic" theory or not. We infer that he is, from the following paragraph, but that he does not accept the carbonate of ammonia as the agent:—

"I do not feel prepared to give an opinion regarding the efficacy of benzoic acid, lemon-juice, and tartaric acid in these cases of blood-poisoning. It is

[1] "In the albuminuria of pregnancy it is to the pregnancy and not to the kidneys that we must look for relief; in the case of the kidney disease associated with pregnancy, as well as in that of pregnancy associated with kidney disease, it is to the condition of the kidneys that we must specially direct our attention." —Harley, *op. cit.*

[2] Op. cit., p. 232. [3] Op. cit., p. 294.

better that they should be given, however, especially the latter, as they will not do harm, and are claimed on high authority to be efficient." (p. 36.)

By what high authority are they recommended? why are they believed to be efficient? Many who read this book will undoubtedly make these queries; but they will find no answer in it. Authorities upon albuminuria and uræmic eclampsia and their doctrines are totally ignored; Rayer and Simpson and Lever have published their observations; the treatise of Braun has been translated into our language; the work of Cazeaux, with his peculiar views, is in the hands of students throughout our country; the chemical theories of Frerichs have attracted the attention of the medical world, but not a word of the labours or doctrines of either can be learned from this book. To assume that Dr. Elliot is ignorant of either the men, their positive additions to our knowledge, or the theories they have advanced, would be preposterous; the only explanation can be the unfortunate assumption of knowledge on the part of his readers to which we have already alluded.

To these strictures the response will probably be made that this work is strictly clinical in character, and that, therefore, theories and doctrines are properly excluded from it. So far as the *discussion* of theories and doctrines is concerned the answer is good, but no further. It is the peculiar province of clinical teaching to illustrate principles by cases, and to distinguish between diseases of the same name which require different treatment, to lead the beginner through a maze of seeming contradictions, pointing out where there is similarity with apparent difference, and diversity where there is apparent similarity.

But, farther than this, we have a right to expect the expression of an opinion upon points so important as those we have touched upon, because twice in the very brief preface to the book the author tells us that it is published to illustrate and present his "views" upon practice; and yet we find no opinions expressed upon some of the most important and interesting points of our science in regard to which authorities are divided. It is just here that we suffered our greatest disappointment in the work; we did not find what we looked for with interest, and what had been explicitly promised.

We pass on to the treatment of eclampsia. Venesection and delivery are the time-honored and standard remedies; to these, in modern times, has been added a third, chloroform, the power and reliability of which in controlling the disease is marked by the fact that it is used by the advocates of every theory, having conquered for itself a high place in the estimation of those who were at first timid, or of those who, like Blot, strenuously opposed its use. There is yet, however, great diversity of opinion among authorities as to the relative position of these three remedies, as to whether the anæsthetic or bloodletting shall have the first place, delivery being, of course, always subject to the practicability of carrying it into effect. Dr. Elliot is emphatic upon this point:—

"If only one method of treatment were given to me for these cases, my choice would unhesitatingly be for chloroform. The chief indications are, to terminate the labour as speedily as may be justifiable, and meanwhile to keep the patient moderately under the influence of chloroform.

"In looking over my cases, while recalling some in which the agent was administered unskilfully, I see every reason for believing that chloroform is the most prompt and certain agent that we possess for moderating the violence and preventing the recurrence of the convulsions." (pp. 63–4.)

He very far prefers chloroform to ether, and thinks those exceptional

cases in which the use of an anæsthetic diminishes the force of the pains are about of equal frequency with either agent. With these views, of course, Dr. Elliot resorts to the use of chloroform in almost every case, and if the student or young practitioner desires to study the clinical administration of this remedy for this disease he will find in this book the most ample opportunity for doing so.

But the author places chloroform above venesection, and we are again obliged to join issue with him. We do it with the greatest diffidence, and will not think of placing any clinical experience we may have had against his, which has been very extensive indeed. Yet every one is most influenced by personal observation, and wherever that is lacking, the recorded cases of others and the general sense of the profession are the best guides to follow. Now, we may say of bloodletting nearly what we said of chloroform; the adherents of almost all doctrines and the advocates of almost all theories bear testimony to its value and make use of it in practice. Those who reject venesection entirely are very few in number, but we admit their names carry great weight; and the influence of their doctrines and their authority has tended powerfully in recent times to weaken confidence in this remedy, to diminish the frequency of its employment, and more than all, to modify the manner of its administration. But we will give all that is essential, said by Dr. Elliot upon this subject, that his position may be clearly understood:—

"We are tempted to use venesection in cases of puerperal eclampsia by the recommendations of authors, and of so many practitioners—by clinical traditions, in short—as well as by the appearances of great congestion observed in the head and face during the progress of the attacks. The purple, livid face and lips, and tongue; the congested conjunctivæ; and the duskiness of the skin which is often observed; suggest abstraction of blood as a measure of relief. If we analyze our apprehensions, however, we find that extravasation of blood upon the brain is what we chiefly dread; and if we examine the records of autopsies, we find that such a contingency is extremely infrequent, and probably associated in the majority of cases with fatty degeneration of the bloodvessels of that organ.

"Moreover, it may safely be said that a majority of the severe cases of eclampsia occur in patients who are anæmic, and whose subsequent histories display tendencies to hydræmia, and that a roborant treatment with iron is most generally indicated after the immediate dangers of the confinement shall have passed. It is obvious that copious abstraction of blood, during the progress of these attacks, must therefore unfavourably influence the future convalescence of many of these patients.

"Another and natural argument for venesection at the present day, may be found in the likelihood that it may remove some of the poisonous principles which are supposed to affect the nervous centres; but we may eliminate these by other channels, and meanwhile powerfully control their influence by chloroform until we shall have terminated the labour.

"Still, in patients of a plethoric habit, and more especially in cases where we suspect that atheromatous degeneration may be present, the moderate abstraction of blood may be a judicious practice, and not liable to do harm. But large and repeated bleedings do not seem to me to be indicated. Where there are evidences of anæmia, the abstraction of blood should be resorted to with the greatest hesitation.

"In a great majority of my cases blood has been taken, though rarely by venesection, and in moderate quantities. In most, wet cups have been used, a process applicable in various parts of the body, which adds the advantage of counter-irritation to the treatment, and measures accurately the amount of blood which is withdrawn, without the risk, so common in venesection, of taking more than is desired." (pp. 75–76.)

Our comment upon the first paragraph of the above is that we cannot, however closely "we analyze our apprehensions," find that we bleed in eclampsia chiefly to prevent cerebral extravasation. To relieve tension of the bloodvessels; to obviate a congestion, primary as a feature of the disease, and secondary as a consequence of the fits; to profoundly modify the cerebral circulation—these are the reasons which would influence us to apply the remedy; although as a preventive of extravasation the remedy deserves confidence.

To the second, third, and fourth paragraphs we would say that to favour venesection does not necessarily imply favouring "copious abstraction of blood." A rational use of the remedy is the adaptation of it to the case in hand according to the symptoms and the powers of the patient. That while removal of blood undoubtedly "eliminates" poisonous principles, it can do so only to a limited degree; but it is useless to depend upon "other channels" for this when the very citadel of life is stormed, and its destruction threatened before the other channels can be made use of. By venesection we moderate the force of the disease if we do not cure it, and, as with chloroform, gain time, precious time, for the use of other means, and for the termination of the pregnancy, coincident with which, according to Braun, the convulsions will spontaneously terminate in thirty-seven per cent. of the cases.

But the author's abandonment of bloodletting has been progressive:—

"I find myself resorting less frequently to this practice even, or with less confidence in the abstraction of blood in each succeeding year."

It would be interesting to inquire whether this progressive change is the result of the recent doctrines, or from the observation and candid comparison of the result of his cases as formerly treated. Certainly the manner of his treating some cases ten or fifteen years ago suits us much better than his present plan. Take, for instance, Cases 27 and 32 as marked instances. We abridge them, for the benefit of those not having the work, and italicize for ourselves.

M. M.; age 17; primip.; *delicate looking;* convulsions, one of which lasted forty minutes; nothing said of labour pains; os dilatable, and about the size of a dime; face flushed; breathing stertorous; pupils contracted; pulse 160, hard, small, and incompressible. With *head and shoulders elevated, she was bled from a good-sized orifice to about twenty ounces.* Two and a half hours after, pulse 130; one hour after, pulse 115, full, soft, and compressible; pupils natural; no convulsions after bleeding. Recovery.

C. W.; age 30; primip.; Oct. 24, 1852; 3 P. M., found comatose after three convulsions; robust, plethoric temperament; full, hard pulse; v. s. ℥xij, *when consciousness returned.* At 6 P. M., fourth convulsion; *reopened the vein and took* ℥xij *more.* 8 P. M., fifth convulsion; chloroform. 9 P. M., delivered with forceps. 1 A. M., slight convulsion, the last. There is here an evident error in date, for the next entry is Oct. 22, when, her bowels having been moved by calomel, she was *cupped to* ℥xij over lumbar regions, apparently on account of pain on pressure over the kidneys. Steady improvement and recovery.

Now contrast this with Case 13, treated in 1866: Mrs. ——; age and number of labour not given; had had during pregnancy *dimness of vision, seeing objects through a fog or mist; some disturbances of hearing;* on her way to bed, 9.45, was taken with a convulsion; at 11 P. M. a second, severe; no return of consciousness; bled to *six ounces;* patient *very strong*

and plethoric! Next day, 2 A.M., violent convulsion; labour pains; delivery by forceps; chloroform from 11.30 P.M. to 3.30 A.M., when another severe convulsion; bled to *six ounces;* cathartic; 7 A.M., convulsion. Died next day.

The author, then, from what we should term a rational bleeder, has become a timid one; certainly no one would maintain that, in a "very strong and plethoric" woman, the removal of six ounces of blood was sufficient to expect any benefit. Now, the "old masters" taught that everything depended upon the *manner* of this remedy; that the "*pleno rivo*," with elevated head, yielded results which could be obtained by no dribbling stream. We find no mention of this by the author, nor why he has abandoned it, any more than we find any record of the cases or statement of the facts upon which he has changed his practice, and changed it, we think, for the worse.

The truth is, the clinical testimony as to the efficacy of bloodletting is overwhelming; "theory and doctrine" aside, the records of "practice" furnish the most undoubted proof that in the great majority of cases venesection is the most reliable remedy, that it should come first, and the others should be subordinate and secondary as to time of application. Some of the strongest adherents of the toxæmic theory, as Cazeaux and Tyler Smith, advise it almost as strongly as do those who hold other views of the pathology of the disease.[1]

There is another application of venesection which we do not find recommended in this work. We allude to it as a preventive of the convulsive attack. The author tells us (p. 6) that the greatest advantage gained from our recent increase of knowledge has been in prophylaxis. We doubt it much, if the result is to banish bloodletting from the treatment of the threatening symptoms presented by some of the cases in this book. Take, for instance, Case 31, abridged, of course:—

M. C., 24, primip., a large, stout, plethoric woman; *headache during pregnancy.* Feb. 14th, midnight, pains strong, and *she fancied that she saw men standing about her.* 15th, 4 A.M.; pains strong; *complained that she could not see.* At 5 A.M., convulsion; 6 A.M., ditto; 8 A.M., another, and at 9 another, when Dr. Elliot came and did as any other sensible practitioner would have done, bled her, when the pulse fell to 80; its former rate not stated.

Now we do not find here one word of comment or of remark as to anticipating the outburst of convulsion which was so plainly foreshadowed. Surely no clinical teacher could desire a better case or a better opportunity for teaching his inexperienced readers how to read and understand the signs of the coming storm, and in what shape to put the craft under their care so as best to meet and weather it. Educated to believe that such symptoms demand prompt bleeding, and having met with nothing in practice to shake that belief; having been educated, too, to believe that "it is far better to ward off than to cure an attack of puerperal convulsions,"

[1] For striking instances of the happy effect of venesection, we refer the student to Clinical Midwifery, by F. H. Ramsbotham, *Medical Times and Gazette*, Feb. 14, 1863. The cases are not selected or given to sustain any theory, but are all that occurred to the author during four months; and although this was in 1840, no intimation is given that, at the time of publication, the author had changed his views or his practice.

Also to an interesting paper, with cases, by Arthur Scott Donkin, M.D. Edin., etc.; same journal, Feb. 23, 1867.

we could not let such dereliction of duty pass unprotested against however high the authority we may call in question.

We have alluded to the fact that some authorities exclude venesection altogether from the treatment of eclampsia. Braun[1] is the leader of this school; yet he admits that it is not injurious in some exceptional cases. Trousseau has been quoted as an opponent of the measure, but the subject is but briefly considered by him, and his rejection of bloodletting refers to the use of it for cerebral congestion and extravasation only, conditions which he considers as effects and not causes of the convulsions.[2] The later writers upon this side of the question are Joulin,[3] who follows Trousseau; and Tanner.[4] On the other hand, we have one of the "old school" of repeated and extreme bleeders in Depaul, and we regret that we cannot just at this time obtain access to his arguments and statistics. It is curious, too, and worthy of note, that while the latest English writer, Tanner, rejects venesection *in toto*, the latest German authority appeals to the superior results of the bold bleeding of the English as proofs to his countrymen of the efficacy of the remedy.[5]

In the induction of labour and in hastening its termination for eclampsia, the author of this work belongs to an extreme school. Extreme, not in the sense that he would always penetrate an undilated os by manual force, and at all hazards, or if this were impossible, incise it, but extreme to the extent that he would resort to artificial means to effect delivery at the earliest possible moment as a means of treating the convulsions. He does not limit instrumental and manual interference to a condition of actual labour with dilated os, but resorts to means of dilatation, and would act previous to the beginning of labour, even for "threatening symptoms" any time after the child was viable. We will let him speak for himself:—

"My experience leads me steadily to look more favourably on the induction of premature labour, in cases where repeated examinations of the urine show that the conditions of disease are persistent, or progressing despite treatment; where some of the prodromata of eclampsia—the first mutterings of the coming storm—are present; and where the fœtus is fully viable. In cases where the fœtus is not viable, we must wait until the mother's life is actually endangered by successive attacks of eclampsia, or for other conditions recognizable in consultation, which lead irresistibly to the clinical conviction that either the pregnancy or the woman's life must be terminated." (p. 39.)

The first portion of this paragraph contains very extreme doctrine. We think few practitioners would resort to such a measure as the induction of premature labour for "the first mutterings of the coming storm." But

[1] The Uræmic Convulsions of Pregnancy, etc., p. 149. New York, 1858.
[2] Clinique Médicale, ii. p. 142. [3] Op. cit., p. 1148.
[4] On the Signs and Symptoms of Pregnancy, p. 435. Phila., 1868.
[5] Naegele's Lehrbuch der Geburtshülfe. 6ste Auflage. Von Dr. Woldemar Ludwig Grenser, Prof. der Geburtshulfe, Director des Entbindungs-instituts zu Dresden, etc. etc. etc. Mainz, 1867.

"The beneficial effect of suitable bloodletting in the majority of cases of eclampsia is so evident from thousandfold repeated experience, that the objections advanced against it, in modern times, scarcely deserve to be taken into consideration. We refer, for instance, to the extraordinary favourable results which the English can present, and it is they who take blood in eclampsia in quantities so enormous that German physicians will never venture to reach." (p. 674.)

These are the results he refers to:—

"According to Merriman there were lost only 8 mothers out of 36 cases; Churchill 42 out of 152; Lever 44 out of 166; Collins 5 out of 30; Ramsbotham 7 out of 43." (p. 664.)

the author's practice is in accordance with his theory, even if it does not go beyond it. We refer the reader to Case 17 as an example; we are utterly unable to find any serious threatenings of danger, anything justifying interference with the progress of gestation, nor do the four reasons for the interference given on page 49 convince us that it was justifiable.[1] It is to be noted that the first is, "the child was fully viable and living;" yet it was lost! So we are prompted to inquire if another paragraph on p. 39 has, probably, any reference to similar cases?

"Unless the decision be arrived at on account of existing eclampsia or other serious contingency, if the result be not satisfactory, hostile criticism will not be withheld. And if it be satisfactory, and both lives be saved, it may be suggested that the operation was unnecessary, meddlesome, and hazardous. Such is the world."

And such it ought to be! is the only response we can make, in reference to operations undertaken with so little justification as this in Case 17. We would not be too severe, yet we cannot help feeling that some warning ought to be uttered against such doctrines, especially in a book designed for the guidance of the inexperienced practitioner.

Dr. Elliot has detailed some most interesting cases of puerpural convulsions; we recognize the value of his original researches as to the frequency of albuminuria given on page 10, but we have been much disappointed in his treatment of the subject, especially in the want of a clear statement of his views upon important points, and we are unable to coincide with the majority of his therapeutic measures for this important disease.

We pass on to a consideration of the induction of labour and the methods of dilating the os and cervix uteri, treated of in Chapter VI. They are subjects which stand in direct connection with the one just concluded. The connection may not be apparent; the explanation is this: within very recent times great addition has been made to our powers in these respects, and the processes are now brought about more certainly, and by means more nearly resembling nature, and consequently less irritating, than were heretofore in our possession. The great objection to hastening labour in eclampsia, a danger of causing a return of or increasing the violence of the convulsions is therefore in great degree abrogated, and although, as has been seen, we think Dr. Elliot goes further in this direction than but few of the profession would like to follow him, this may be pleaded in his justification that he uses means unknown until recently and as to the superiority of which over those formerly used there cannot be a question. It is not alone, of course, for eclampsia that induction of labour and hastening of dilatation come into use; for a rigid and unyielding os in ordinary labour, for cases of a contracted pelvis, and in ante-partum hemorrhage it is frequently required. Cases of all these conditions are given and the treatment detailed, making this part of the book one of its most interesting and useful portions, and the student who would make himself acquainted with the means at our command, for inducing and hastening labour, should study it carefully.

The use of sponge-tents and manual dilatation of the os need not detain us, as their use has long been known. The additions to our resources,

[1] Neither do the facts and fortunate termination to mother and child of Case 70, given in connection with another subject, convince us that this is good practice. Labour here was induced "to spare the dangers and delays of the last month of pregnancy" in a patient who had had eclampsia and was suffering from hemiplegia and choreic convulsions.

which we have alluded to, are the uterine douche and Barnes' dilators. They are efficient means, and generally believed to be safe, and being of recent introduction to professional notice, we will quote prètty freely from Dr. Elliot in regard to both of them.

"The douche is always attainable, always serviceable, very often entirely efficient in itself; never painful or dangerous, when properly used, in cases where there are no conditions which prevent the risk of fatigue, delay, and some exposure, which its use demands."

"The douche cannot be used effectually unless the stream be directed steadily against and within the inner rim of the os uteri. A vaginal douche would be too uncertain in its action. * * * In directing the stream against the os, it is to be remembered that an accumulation within the uterus is liable to change the position of the child, or, perhaps, to develop serious dangers for the mother. * * * I prefer always to use water of a temperature most agreeable to the patient, and to inject one or two gallons at once with an ordinary Davidson's syringe, taking care to keep the point of the forefinger constantly a little in advance of the nozzle, so as to appreciate the direction of the stream. * * * Used in the manner in which I have recommended, with the patient on her back, as we place her for forceps, I have never met with any evil results from its use. It has failed me; it has demanded frequent repetitions and delay, but it has proved harmless to mother and child; and I would no more dread to use it with such precautions, than an ordinary vaginal injection." (pp. 158–9.)

"It is interesting to note the closeness with which the phenomena presented simulate those of the most fortunate labour. First, relaxation of the soft parts, with increased secretion; the os then softens, relaxes, and dilates, when the pouch of membranes passes intact into the vagina. The first stage of labour may be said to be accomplished with the least possible inconvenience, and the patient saved in great measure from its attendant sufferings; which are probably productive of more annoyance and anxiety than the severer expulsive efforts which promise speedy relief to the burden." (p. 161.)

We believe we have correctly stated the general belief to be in favour of the entire absence of danger from this measure, and the author's testimony is strong upon this point. Yet, unhappily, there have been fatal accidents accompanying it, numerous enough to place its safety somewhat below the estimate of Dr. Elliot. Thus Joulin says, the uterine douche has caused the death of the mother in at least three cases in France; that Simpson has met with a fatal case, Lazette with two, and that in a collection of thirty-six cases of this kind, complicated with accident, twelve women have succumbed.[1]

Dr. Elliot does not tell us anything as to how frequently the douche fails. In eighty-one cases quoted by Stoltz from Krause, it succeeded alone in sixty-eight; in thirteen, other accessory or more powerful means were required. Twenty-nine children were born living, twenty-six dead.[2]

Barnes' dilators have not been long enough in existence for the profession generally in this country to know what they are. They have not yet found their way into the text-books, or into the hands of the general practitioner. Dr. Elliot claims credit for having been among the first, if not the first to use these instruments, as well as the douche, and we cheerfully accord it to him. His book, too, will be the means of bringing them into notice, and spreading their use here. Under these circumstances, we think, a description of them was not only desirable, but its omission a great mistake. It is impossible that every reader into whose hands this book comes will know all about them, or that he has only to go around the corner to

[1] Op. cit., p. 1111.
[2] Nouveau Dictionnaire; Art. Accouchement prématuré artificiel.

an instrument dealers to supply his lacking knowledge. It would have taken brief space to have said that they consist of a set of India-rubber bags of different sizes, to be introduced within the os, and injected with water, being so shaped as to retain their position until dilatation is effected. As to their employment and advantages, the author says:—

"These can always be employed with facility where two fingers can pass into the os, and are susceptible, in favourable cases, of earlier use.[1] They are, perhaps, more widely useful than the douche, and are applicable in cases of hemorrhage, jactitation, and insubordination, where the douche cannot be used. They are more certain, and can be relied on beyond any other measure to rapidly dilate the cervix, and allow the confident anticipation of a very rapid operative delivery within a few hours. They combine facility of introduction, facility of retention, hydrostatic pressure, application of heat or cold, compatibility with frequent vaginal examinations, with comparative safety against internal uterine hemorrhage." (p. 170.)

"Barnes' dilators are so valuable that we cannot escape the conviction that no man is fully prepared for the contingencies which attend the induction of labour and rapid dilatation of the cervix uteri, who is unprovided with this, or a similar instrument. The dilatation of the cervix, by fluid pressure applied from below, has taken rank in midwifery as a fixed and trusty procedure, based on the closest imitation of nature's laws, and the names of Arnot, Keiller, Jardine, Murray, the younger Storer, St. Tarnier, and Barnes are indissolubly connected therewith. But the great merit of making the method popular and practicable rests with Dr. Barnes of London, who has the same relations to this procedure that Morton bears to the introduction of ether as an anæsthetic. It is greatly to the credit of the learned and indefatigable Dr. Barnes, that he presents both his claims and the method so frankly, modestly, and completely." (p. 174.)

We need scarcely say that the cases fully illustrate the value of this admirable invention and deserve careful study on the part of the young accoucheur.

The author makes no mention of some other standard remedies for a rigid os. Venesection and tartar emetic we can well spare; they are supplanted by chloroform, and we are surprised at finding no mention of the power of this anæsthetic in promoting relaxation of the os, especially as the author uses it freely. It sometimes acts admirably, as has been attested by numerous and most reliable witnesses. We should have been glad, too, to have seen an expression of opinion as to the reliability of belladonna in this respect; its powers are questioned by the highest authority, and as we are entirely sceptical ourselves, we should like to know how the author's clinical experience bears upon the question.

The os being dilated, the contractile powers of the uterus need sometimes to be excited. As such excitors, the douche and Barnes' dilators act powerfully as well as dilators, but other measures are sometimes necessary to bring on expulsive pains. These Dr. Elliot considers next, *seriatim*, giving illustrative cases.

The introduction and retention of a catheter between the membranes and the uterus comes first in order, a measure for which we are indebted to Krause, of Dorpat, although the way was broken by Lehmann and Zuydhoeck, of Amsterdam, who did not allow the instrument to remain.

"Although theoretically a harsh procedure, it does not appear to increase risks of metritis; and is very effectual when left in situ." (p. 186.)

[1] Dr. Barnes says, an os uteri that will admit one finger will admit a No. 2 dilator.

Separation of the membranes may be made "with advantage," which is about all that requires to be said of the measure.

We find some interesting testimony as to the efficacy of galvanism and electricity in exciting uterine contraction. They have not won the confidence of the author; they have failed in his hands, too, as emmenagogue and lactagogue. In two cases we faithfully tried the interrupted electro-magnetic current to promote the secretion of milk, and did not observe the slightest effect.

"It seems to me that there is too great a tendency in medical journals to parade a few cases in which the menses, or the secretion of milk, followed the use of the current, rather than to examine the question dispassionately, and on a large scale. I have made careful trials, with Kidder's best instrument, on hospital patients observed by the class, without success, and I have used the same instrument very thoroughly and very often in private practice without other satisfaction than that of having made the effort. Even in the cases adduced by the best authorities, the number is too few to enable us to feel certain that coincidences are not reported as results." (p. 191.)

In regard to puncture of the membranes as a means of hastening labour, the author gives some excellent advice against the measure. As he will never be convicted of ultra-conservatism in regard to operative procedures; we think the young practitioner may rely upon his advice as being sound and worthy of remembrance:—

"There are few rules more worthy of being impressed on the mind of the young obstetrician than the desirability of preserving the integrity of the membranes until the cervix uteri is fully dilated or dilatable; and until both the position of the child and its relations to the maternal organs are such as to promise a natural or permit a speedy delivery." (p. 193.)

This is what the author says of ergot, the only medical means worthy any consideration.

"Ergot is too uncertain in cases where uterine contractions have not commenced; when efficient, it increases the risk to the child. As an agent for strengthening *existing* contractions, and rendering them more frequent, its claims are paramount. Still, with the exception of those cases, in which flooding may be apprehended; and those in which the delay can be attributed to no other cause than deficient expulsive force, while the head or breech is yet very high in the pelvis; or of those in which the vagina and perineum are so rigid as to be specially liable to laceration from instruments—in those cases of delayed labour, in short, in which the forceps can readily be used and the choice lies between them and ergot, my personal preference would be for the forceps; though my long observation of the use of forceps in inexperienced hands, would incline me to recommend the use of ergot to the beginner." (p. 194.)

That ergot increases the risk to the child is everywhere acknowledged by authorities, and cannot be too strongly impressed upon the mind of the young practitioner; we believe that it does more than increase the risk; it *insures its loss* if delivery does not speedily follow upon the exercise of the powers of the medicine; squeezed by the tetanic contractions of the uterus as in a vice, it perishes from interference with its blood-purification as directly as if a string were tied around its umbilical cord. Long ago we learned the lesson which Dr. Elliot says he learned from Case 78; yet he resorts to this medicine very frequently; what he *says* we have given above; what he *does* must be gathered from a perusal of his book not only in this section, but all through it. We think the frequency with which he resorts to ergot and the period of labour at which he sometimes administers it will excite the attention of any careful reader, and especially when

it is considered that it is by one who from large experience has gained familiarity with the forceps and who resorts to them without hesitation. A little farther along we find the following sentence:—

"Again, the ergot has acted delightfully and with great power, but has afterward proved a serious obstacle to the removal of an adherent placenta, a condition which can never be diagnosticated in advance."

We believe that the administration of ergot very frequently occasions serious difficulty in the removal of a *non-adherent* placenta. It does so by inducing irregular contraction of the uterine fibres, producing the so-called "hour-glass contraction." Our experience may have been very singular, undoubtedly it has been limited, but the effect has followed the administration of the remedy so generally, and so certainly, that it has forced itself upon our attention and we could not escape modifying our practice accordingly.[1]

Entertaining such views then as to the action of ergot, having long since become a convert to the soundness and wisdom of the teaching of one of our leading American obstetrical authorities—"*never give ergot as an expulsive remedy*"—we must protest against the recommendation given above to the beginner to use ergot instead of the forceps.

Dr. Elliot must have seen some very bad cases of mischief from forceps if he has seen worse than has fallen under our observation from ergot. The trouble is that students in this country have not opportunity to learn the use of instruments; they are not so generally exercised on the *phantome* as in European schools; clinical observation of their use is not enjoyed, and under these circumstances it is not surprising that there are bungling and mischief. But let the young man study his instruments and the intention of them; let him exercise himself in their use, as he does with his surgical instruments, and he will find the difficulties to be overcome, and skill no harder to acquire, with the one than with another. Then he can bring to the assistance of his parturient patient instead of an agent which most atrociously increases her agonies and almost certainly destroys one of the lives confided to his care, an instrument with which he can speedily terminate her labour without increasing the danger; instead of setting in motion a train of action over which he has no further control however disastrous may be its progress, he uses an agent which never becomes his master, and is always under the control of the brain that directs it. In enunciating such views as these we anticipate the quotation: "*Meddlesome midwifery is bad!*" When we give in our allegiance to that often-heard and often-misapplied axiom we shall extend it to *medicines* as well as to *instruments* and begin by advocating its inscription upon the ergot bottle of every practitioner in the land.[2]

[1] Churchill alludes to this effect of ergot.

[2] We cannot avoid quoting one of the latest, as it is one of the highest authorities, upon this subject:—

"When you have given ergot you are likely to be in the position of Frankenstein. You have evoked a power which you cannot control. Ergotism, like strychnism, will run its course. If it acts too long, or too intensely, you cannot help it. The ergotic contraction of the uterus, when characteristically developed, resembles tetanus. Then woe to the mother if the cervix does not yield, if the pelvis is narrowed, if, in short, any obstacle should delay the passage of the child. And woe to the child itself if it be not quickly born. I very much prefer to use weapons that obey me, that will do as much, or even less, than I wish. I fear to use weapons that will do more."—Barnes, Lectures on Obstetric Operations, *Medical Times and Gazette*, November 30th, 1867.

In Chapters IX. and X. under the head of "Obstetric Operations in deformed Pelves," the application of the forceps is considered, a subject which is second to no other either in regard to the requirements of daily practice, the mutations in professional favour which this instrument has experienced, or the practical questions in regard to it which are yet under discussion. A thorough acquaintance with the instrument and its uses is becoming more and more a matter of necessity to the practitioner:—

"Dewees states that he only met three cases of pelvic deformity during his long and brilliant career, and there are many excellent practitioners in our country, in large practice, with a similar experience. Indeed, it is true, that the American women are exempt, as a rule, from these deformities. Still, the tide of immigration bears with it the same varieties of pelves which are described in the works of German, French, and other authors; while the increasing size of our cities and manufacturing towns, and the difficulties of obtaining a bare subsistence without continuous labour in unhealthy localities are producing the same results here which have been so long and so well known elsewhere." (p. 252.)

But it is not alone for deformed pelvis that the instrument is required. There are various elements of labour which may produce difficulty and call for instrumental assistance even when the pelvis is normal, and thus occasion the widest variations between different labours in the same woman. There are some excellent remarks in this connection, by the author, and they deserve to be repeated because the fact is not as generally known as it deserves to be. When a woman has been delivered once or twice with instruments and then has a speedy and unaided delivery, or when one who has needed no assistance for several children and requires it at another time, it too often gives rise to favourable or unfavourable comments upon the practitioner, when neither was deserved.

"The difference in the size of a child in different pregnancies is not only felt in the range from four pounds to twelve, and in the probability of increased size in ratio to the number of pregnancy, but a material influence is exerted by the different size of the head of two children weighing alike, as well as in fortunate adaptations to special requirements. Thorough flexion in one case as compared with imperfect flexion in another; accurate dip of the head in one case instead of an oblique direction; fortunate correspondence of the head to that diameter which may be roomier than the other; varying expulsive forces; differences in the ossification and capabilities for moulding of the head, with many other influences, affect the results of different labours." (pp. 253–4.)

As to the particular forceps to be preferred, the author does not express an opinion; he has used "some fourteen different styles," and has introduced one to the profession with some modifications so that there is an instrument known by his name. No description of his own instrument is given, although it is repeatedly referred to, an omission which, we think, is to be regretted, because readers will be puzzled all through the book by reading of "the pivot"—"the pivot in the second hole"—and only learn towards its close that it is a pin sliding between the handles to prevent their approximation and thus obviate too great pressure upon the head. Having, fortunately, seen the author's instrument we escaped this perplexity. No claim of originality is made for this instrument upon the approximation of the handles, and we presume Dr. Elliot to be too well read in the history of his speciality to make any such claim. It affords but another instance of the truth of the saying that "an ancient name can be found for every modern modification of the forceps," for the princi-

ple has been applied, and the end attained by various means, over and over again, by Petit, Aitken, Evans, von Froriep, Uhthoff, Ulende, and others.[1]

The following are his characteristics of a good instrument:—

"It should take up as little room as is consistent with strength, and its uses; it should afford every opportunity for powerful traction, without risking compression, until compression should be demonstrated to be unavoidable; it should have such a pelvic curve as may enable the operator to convert occipito and mento-posterior positions into anterior positions, provided no other conditions prevent; it should have no edges liable to project unduly and risk the laceration or cutting of maternal tissues." (p. 302.)

He is much in favour of a narrow blade:—

"It is very desirable that forceps should occupy as little space as possible. In very many cases a slender and narrow blade can be readily or cautiously passed, where but a fractional increase of size might render the application impossible. Hence that instrument will have the widest range of usefulness which takes up as little room as is consistent with strength and the requisites for the head curve. All sharp edges are hazardous, and the extreme breadth from one outer edge to the other of each blade should taper gradually toward the handle, and not describe the bold convexity of Davis's and similar forceps. When the head is seized in the bi-parietal diameter nicely and satisfactorily, as pictured by Meigs in his work, that instrument is perfectly adapted to the average head, and neither the breadth of its blades nor the convexity alluded to is objectionable. But we have seen that this application is impossible in all but the simplest cases; and when the head is seized in its oblique diameters, or the instrument cannot be advanced so as to grasp the whole head thoroughly, then the edge of one or of each blade may be free and liable to cut the vagina or the perineum." (pp. 301–2.)

From these views, and from the statement that "it is impossible to devise a forceps which can be the best instrument for every case," we suppose the author would concur with those who believe that the "hand" is of more importance than the "instrument," and that he would agree with the proposition of Joulin, that as "there is no bad forceps for the skilful and experienced practitioner, there is no good one for him who does not know how to use it."

We can add our testimony to the necessity of the purchaser watching the instrument-maker:—

"Very much depends on the way in which the instrument-maker tempers the metal and follows the model. This is so often neglected, that every man who has devised an instrument must have seen specimens for which he would regret to be responsible." (p. 303.)

Not very long since, being desirous of obtaining Simpson's forceps, we wrote to an eastern maker to inquire if we could obtain it from him, made accurately after the description in Simpson's works. Receiving an affirmative answer, we ordered one, and got an instrument in which the tips of the blades come very nearly three-fourths of an inch nearer together, when the handles are closed, than they should; and whereas Simpson claims it as a distinctive feature of the lock proposed by him that it be loose, so as to allow of lateral motion and overlapping to a considerable degree, "thus facilitating their introduction and application," in the pair we received the

[1] Researches on Operative Midwifery. By Fleetwood Churchill. Dublin, 1841, plate viii., fig. 1; plate ix., figs. 3, 4, 5.

Abbildungen aus der Gesammtgebiete der theoretisch-practishen Geburtshülfe. Ed. Casp. Jac. Von Siebold. Berlin, 1835. Taf. lxi., lxii., lxvii., lxix., lxxii. And pp. 269, 272, 289, of the text.

lock fits with the most perfect accuracy. We have also a pair of Hodge's forceps, made by a western maker, which varies full half an inch in some of the most important measurements from those given by the originator, and which are nearly two ounces under weight, thus decreasing the thickness of the blades and sharpening their edges.

In regard to the manner of using the instrument, although there are no specific directions as to its application in different positions of the head, we find some good remarks for the benefit of the inexperienced operators:—

"There is another tendency against which beginners must be warned, viz., an exaggeration of the side-to-side movement in traction. We are taught that forceps advance the head by direct traction, and by a double lever side-to-side movement. And so they do. There is also once in a while an advantage in starting a head by moving the handles a little up and down before drawing upon them. But I have known more than one instance in which the fulcrum has been made of the descending rami, and the tissues on each side have been cut by pressure of the instrument. Vaginal, not perineal lacerations from forceps are more liable to occur than is generally known, and nothing marks the experienced operator more than his care to avoid these lesions." (p. 307.)

We are glad to find that the author here recognizes the true point and source of danger; that it is not in the injuries which may be inflicted by the movement of the points of the instrument, as has been stated by some writers, but lies in a veritable trituration of the maternal tissues which are crushed by the action of a lever, the power of which is readily seen to be immense when the length of its long arm is compared with that of the short. There is no doubt that in proportion as the forceps is used simply as a tractor it is harmless, and in proportion as the properties of a compressor and a lever are given to it the danger will increase, and care and judgment be demanded in its use. Next to this will a thorough understanding of the mechanism of labour and of the case in hand insure safety even when the difficulties to be overcome are very great:—

"There are few facts which impress the beginner more powerfully than the tractive force which can be advantageously and properly used in difficult forceps cases. An inexpert man, not certain that he has grasped the head properly and firmly—not certain that his tractions are made in the proper axis—not sure that he is delivering in obedience to the laws of the mechanism of labour—and not certain that he could stop his tractions instantly at the first commencement of slipping—has no right to put so much force on the instrument.

"But the man alive to all these indications—sure of the position of his blades, and of the necessity for great force—pulling only with his arms, and not with his back, and wide awake all the time—may find that just such tractions are the only ones which can terminate a labour without recourse to embryotomy; and that just such tractions, repeated again if necessary, may alone justify the subsequent resort to embryotomy." (pp. 305–6.)

Dr. Elliot is in favour of the application of the forceps at the brim, and the book contains many instances of its passage within the undilated os; yet he fully recognizes the increased difficulties and risks:—

"This operation is always difficult, always involves risks to the mother and to the child, and demands the greatest skill and caution. It may be an operation of necessity when the head cannot be pushed back in the uterus so as to admit of version, and the child be living; it may be an operation of election when the head is readily movable, or when the child is certainly dead."

* * * "While this additional risk is a motive for deferring this operation in many cases, it offers no justification whatever for deferring it too long, or for resorting to any deadly operation until both forceps, and version, and time, and all other methods, have been tried, and perhaps tried again." (p. 278.)

The space through which delivery can be effected with the forceps is placed somewhat lower by the author than by some authorities: "under favourable circumstances when the conjugate measures only three inches."

There are two points connected with the use of the forceps at the brim of the pelvis which we wish Dr. Elliot had noticed, or in regard to which he had been more explicit. The first is as to the manner of their introduction at the brim; as to whether the head of the child or the sides of the pelvis shall be the guides. On pages 298 and 300 he says something upon this point, but not all we could wish. He says, "The head is always seized obliquely—from one brow to behind the opposite ear;" Cazeaux says it will "generally" be thus caught from the necessities of introduction. In the vast majority of cases of arrest at the brim, the shortening being in the conjugate, the head will be directly transverse, and in most of these cases it will be impossible, at least for those of ordinary skill, to seize it other than with one blade over the brow and the other over the occiput. The objection that the pressure upon these parts of the head increases the diameter in which the arrest is made has been shown to be more theoretical than practical, and the instrument generally surmounts the difficulty simply as a tractor. The more serious objection of increased danger to the child is shown by Hodge[1] not to be so great as has been maintained. But this plan of application is advised and taught by the greatest number of writers; the highest and latest authorities,[2] in applications of the forceps at the brim, disregard the head entirely and apply the instrument along the sides of the pelvis, removing them as the head descends in the pelvis and the turn is made, a procedure not always necessary, however. The most important bearing of the question is this: by teaching that at the brim the forceps should be applied in reference to the head the difficulties of their use is vastly increased, and the frequency of resort to them will be much limited with proportionate increase of other and worse means of delivery. So markedly has this been the case as to have produced eras in the history of the art; to the doctrines of Smellie in regard to the necessity of the application of the long forceps over the sides of the head has been attributed the infrequent use of them in British practice, the unfortunate preference for the short instrument and consequent retrograde of the obstetrical art.[3]

The other point is in regard to the plan of applying the forceps early, when there is a contraction of the brim, and of using them as an assistance to the natural powers exerted over a considerable length of time. As the author has seen fit to warn against an injudicious application of force, we wish he had also warned against what we believe to be a common error, the idea that speedy delivery should follow the application of the forceps, and that he had called attention to the teaching of Hodge[4] in this respect, which we believe to be a valuable modification of the application of the instrument, and as being American in origin, especially deserving attention in a work so fully devoted to the operative part of obstetrics.

Upon the question as to the relative merits of version and the forceps,

[1] System of Obstetrics, p. 401.

[2] We may especially mention the German writers Velpeau, Joulin, op. cit.; Barnes, Med. Times and Gaz., 1867; and F. H. Ramsbotham, Clinical Midwifery, same journal, March, 1862.

[3] See Joulin. Barnes, in his course of lectures now being published, says the obstetrics of his country has retrograded.

[4] Op. cit., pp. 403-4.

where there is contraction of the brim, and the child is living, a question upon which a vast amount of ingenuity and investigation have been expended, the author is inclined to favour the forceps, and gives expression to his opinion in an open, straight-forward way, which we should have been better pleased had he followed in regard to some other questions:—

"In one case I have delivered with version after I had failed with forceps; and while I have delivered successfully and satisfactorily by version in some cases—in others where I have tried version after failing with forceps, it has not been more successful. Examples of these results are scattered through the book, and some are subjoined.

"Every now and then we meet with recorded cases of version in deformed pelvis, where the results are so satisfactory that one feels as though they should establish the law for our interference. But, alas! few men are willing to print a frank statement of all their failures. Certainly, for my own part, despite my admiration for Sir James Simpson's theory and argument, my own preferences are for forceps as an elective operation, though time and further observation may change my views. Still, my experience thus far, and the opportunities which I have enjoyed for witnessing the operation of others, strengthen my opinion.

"In a conjugate of three inches and upward, with a living child and a head presentation, my first choice would be for forceps. Between two and a half and three, if the child were living, I should perform version." (pp. 348.)

It may require a bold man to differ with Simpson in regard to a disputed point in obstetrics, yet we believe the weight of authority to be with Dr. Elliot in this matter. Even Cazeaux would not turn "when the top of the head presents in a favourable position," or not until "after several fruitless attempts with the forceps." But, too frequently, in writing and speaking of this subject, Simpson is represented as the champion of version as compared with the forceps, while in reality it is as compared with craniotomy principally, and with forceps only secondarily, that he carries on the discussion. This may be especially seen in a contribution, written several years after the publication of his principal essay, in which he speaks of the advantages of version for cases in which the head cannot pass "by the unaided efforts of nature, *or even with the assistance of the long forceps*, if that instrument is had recourse to."[1]

But we consider that the author has failed to express himself plainly and decidedly upon the greatest and most interesting question connected with the use of the forceps. To confine the application of the instrument only to cases of deformed pelves, would be, in our opinion, sadly to limit the benefits it is capable of conferring. The most extreme views have been held as to the circumstances which render a resort to assistance in labour justifiable. In not very remote times it was taught that the head must have rested for six hours on the perineum before using the forceps; and even by respectable authority of our own day, the doctrine is laid down that we are not to interfere with the labour "until perfectly satisfied that the obstacle *cannot* be overcome by the natural powers with safety to the mother and child" (*Churchill*); and that to "deliver by the forceps merely to abbreviate a slow but natural labour, is highly improper" (*Murphy*, 2d ed.), and renders the operator especially reprehensible for any departure from ordinary convalescence which may follow. This school would wait until certain symptoms—as a frequent pulse, tender abdomen, a hot and dry vagina, betokened danger, before they would become more

[1] Obstetric Works, vol. i. p. 547. Philadelphia, 1855.

than passive spectators of the painful struggle. But there is a more modern, a more humane, and we believe a far larger school; its doctrines are that it is far better to anticipate danger than to wait until a morbid train of symptoms are set going, the cessation of which no one can foresee; that it is our duty to aid the powers of the women; and that, above all, her sufferings deserve consideration at our hands, and that it is our duty to abbreviate them whenever possible to do so with safety. Now, to which of these schools does Dr. Elliot belong? He expresses himself very moderately to the intent that the greatest danger is likely to be from delay; but he does not express himself very strongly in favour of interference. We will quote what he says upon the period for operating:—

"It is easier to lay down rules than to seize the fortunate clinical moment. After a man has seen enough of difficult midwifery to have anxiously watched in consultation for the fitting moment to have finally operated, and then to have regretted that he had not waited longer; and, on the other hand, when in like circumstances he has regretted that he did not operate before, he at last understands the perplexities of the question."

"I believe, however, that among practitioners competent and accustomed to perform obstetric operations, the chief tendency to evil results from delay, and trusting to the efforts of nature; an error to which they are inclined by a knowledge of the powers of nature, and a familiarity with the difficulties and the risks of operative midwifery.

"Practitioners not accustomed to perform obstetric operations, but well educated in the theory, are more liable to err in the opposite direction from exaggerating the necessities for operative interference, and from underrating its risks. Especially may this be true of those who have fortunately been successful in a limited field, and see no reason to anticipate other results. 'He jests at scars who never felt a wound.'

"In competent hands the operation had better always be performed too soon than a little too late."

There is just enough conservatism in this, we think, to render the inexperienced practitioner timid, and nothing to enlighten him as to the symptoms by which he shall judge as to the "proper time" for resorting to instruments. Would Dr. Elliot wait for the "olive-coloured discharge" from the vagina before operating?—we judge not; yet he does not take the opportunity presented by cases 98 and 99 to warn against too long reliance upon the powers of nature. But undoubtedly the wards of Bellevue Hospital do not present frequent examples of the class of cases in which we believe the forceps should be far more frequently used. They occur in the "better classes" of our cities, and the causes producing them are daily increasing, and the consequent increase of a necessity for instrumental aid in labour is far more strongly favoured by them than by the importation of deformed pelves from the old world. Luxurious and enervating habits weaken the bodies of our women, a faulty education and the frivolous pursuits of fashionable life render their nervous system unduly excitable, and illy fitted to bear the trials of parturition; the process is prolonged simply from want of power to exercise the auxiliary force under voluntary control, and if much prolonged the system experiences a shock from which it but slowly, if ever, struggles back to health. The experience of every practitioner will furnish numerous instances of this kind—cases in which the first stage has extended over twelve, fifteen, or twenty hours of severe suffering, perhaps the membranes having ruptured at the beginning of the labour. To this succeeds the second stage, which may not last very long, or be very severe before the patient's strength fails; the head has reached

the lower strait, but she is worn out and exhausted; hope deferred has made her heart sick, and exhortations to "courage," and assurances that she is "doing well," have become a hollow mockery to her ear; she can no longer bring to bear the expulsive powers of the abdominal muscles from fatigue, or she is restrained from doing so by pain occasioned by the pressure upon the floor of the pelvis, the last obstacle to be overcome. Thus matters may remain through long hours of suffering, and thus they are allowed to remain in the hands of those who teach the doctrines we have alluded to, balancing a final triumph of the powers of nature against utter exhaustion on the part of the mother, and the loss of the child. If we interfere, there is only the choice between ergot and the forceps. Of the former we need say nothing additional, and we look upon it as one of the most surprising instances of inconsistency that those who decry the use of the forceps in such cases are those who resort to ergot, against which so many well-grounded objections can be brought. But the application of the forceps in such cases is comparatively simple, and as devoid of risk as easy of execution; while, compared with the speedy relief it affords, no operation known to our art can compare with it. For such cases they are far more frequently required than to overcome the obstructions of a deformed pelvis. Cazeaux says nine times out of ten they are applied to overcome the resistance of the muscles of the perineum; and Barnes makes a similar statement. While, therefore, we would not go as far as a recent writer, and advocate the use of the instrument whenever "the second stage ceases to be actively progressive,"[1] we believe, as does Barnes, that we "are far from having utilized the powers of the instrument to the highest legitimate extent." As we would with anæsthetics spare the woman's nervous system by moderating her sufferings, so would we with the forceps, by shortening their duration.

Those who advocate more active assistance to women during parturition must always expect to meet the objections which always have been advanced against it. The most serious, of course, is mortality; this will be urged notwithstanding Simpson has so plainly shown that the mortality of both mother and child increases in a direct ratio with duration of the labour. Yet how especially difficult is it to obtain fair statistics as to forceps operations. They include the most difficult and the simplest cases; those in which the instrument has been used at the proper time, and those in which many hours of delay have already rendered the condition of the woman precarious. The fairest statistics would be those made up by men who resort to the instrument freely and extended over a large number of cases. These are at present lacking to any great extent.[2]

The question of mortality, too, has its double aspect, that of the alternative and severer operation which follows if the forceps are rejected or

[1] Arthur B. Steele, Lecturer on Midwifery, Liverpool Royal Infirmary School of Medicine, Braithwaite's Retros., Jan. 1868.

[2] Dr. Hamilton, of Falkirk, used the forceps ninety times out of 731 consecutive cases, or once in every eight cases, and out of the whole 731 cases not a child was lost.

Dr. Lawrence reports 1000 consecutive cases of labour. During the first 500, acting on the usual rule of delaying interference, he used the forceps eight times, or 1 in 62. Four of these children were born dead. During the second 500 he used them twenty times, or 1 in 25, none of the children being dead.—*On the Treatment of Tedious Labour in the Second Stage.* By J. Thorburn, M. D., Lecturer on Midwifery at the Manchester Royal School of Medicine. London, 1866. Pamphlet.

their application too long delayed; and although we are advocating their use in a class of cases little likely to require craniotomy, yet the fact that as the forceps have been neglected the use of the perforator has increased, has its bearing, and should be admitted into the pleadings. Thus we have the well-known table given by Simpson[1] which goes from Siebold with one forceps delivery to every seven cases, and one craniotomy in 2093; to Madame Lachapelle with forceps once in 293 cases, and craniotomy once in 1854; to Collins with one forceps delivery in 617 cases, and craniotomy once in 141. He carried reliance upon nature to the extreme, and the results are patent! Yet this table, despite the high authority from which it emanates, does not give truly the other end of the scale. Fr. B. Osiander, during thirty years' administration of the Göttingen Lying-in Asylum, used the forceps once in every 2.5 cases; yet he only used the perforator once in his life! How many labours he attended we cannot say, but the deliveries in the institution alluded to numbered 2540.[2]

In regard to the other serious objection to operative interference with labour, that lesions may be produced by an unskilful use of the instruments, we shall borrow Dr. Thorburn's reply, that we have no more right to debar suffering woman from the advantages to be derived from instruments on the ground that they may be clumsily employed, than the surgeon has to counsel the utmost delay in hernia, because a bungler might wound the bowel. But the truth is, authority is almost unanimous that it is the prolonged pressure of the child's head which produces sloughing of the maternal tissues and fistulæ, and not the use of instruments. This has been shown by Simpson, and Beatty, and Hodge, and Cazeaux, and numerous others. We may add to their testimony here that of Baker Brown, who, before the British Medical Association, said that "out of about 100 cases of lesions following labour, 90 per cent. were attributable to protracted labour. The idea that they were produced by the use of instruments was a farce and a bugbear."[3] Joulin states that he availed himself of the ample experience of Jobert for the solution of this question, and had access to an inedited manuscript containing the statistics of 150 cases; the opinion of that eminent surgeon was decidedly that "fistulæ are *always* the consequence of too prolonged labour, and *never* result from an early application of the forceps."[4] In our own country, out of 250 cases given by Dr. Emmet, not more than three cases resulted from instrumental delivery, and "these were cases of malpractice, and of no value in a statistical point of view;" all the rest were from delayed labour.[5] Now, if there be a question in medicine which may be considered settled, surely it is this; it was only reconsidered here because of the pertinacity with which the objection is advanced by those who are opposed to operative interference with labour except as a dire necessity.

Were the doctrines we have advanced in regard to an earlier and more frequent resort to the forceps, and in regard to their use as a means of saving suffering, the expression of individual opinion only, they would deserve little consideration. But we believe they are the expression of a phase of professional opinion; that the tendency to reaction against the

[1] Obstetric Works, vol. i. p. 755.
[2] Versuch einer Geschichte der Geburtshülfe. Von Ed. Casp. Jac. von Siebold. II Band, pp. 601–604.
[3] Med. Times and Gaz., Sept. 1, 1866.
[4] Op. cit., p. 1570.
[5] Amer. Journ. of the Med. Sciences, Oct. 1867.

doctrines of fifty years ago is strong; that it is marked even in Great Britain,[1] the peculiar territory of the let-alone doctrine, the country which gave to the world the forceps, and has furnished the strongest example of the extent to which they can be neglected; and that in this country, where a greater predilection for instrumental assistance has always been shown, there is at the present time a decided feeling in favour of an earlier resort to it. It is for these reasons we regret that Dr. Elliot's work contains nothing upon this matter, no admonition to the young practitioner that to minister to suffering is second only to the great mission of his life; or, on the other hand, no counsel to stay his hand for fear of the mischief he may do. The author, we doubt not, will contribute to the current by the recital of so many cases in which he resorted to the forceps; but he does not note its direction, its strength, or the probable duration of its flow.

There are other most interesting parts of this work to which we would willingly devote some attention, but we have considered subjects enough and made extracts sufficient to enable our readers to judge of its aim, character, and of the manner in which the author has executed his task. Its chief fault is a want of clearness of statement and decided expression of opinion as to unsettled points in practice, and a want of methodical arrangement and system, which is often annoying and sometimes confusing. We are aware that it is a collection made up from journal articles, clinical lectures, and the note-book; yet this will scarcely excuse such an instance as Chapter III., in which, after a page and a half devoted to the subject-matter, are interpolated ten or twelve pages of cases and remarks entirely foreign to it. But the work has great merits, and those which will outweigh the faults. There is an air of truthfulness and candour in the relation of cases which inspires confidence; there is that absence of any attempt to warp facts, or place them in special lights, so as to sustain pet theories, which marks the man of scientific training; there is a fair record of the unsuccessful as well as of the successful ones, so that the lessons of defeat may be learned from its pages as well as the lessons of victory. The young practitioner will find it a mine of clinical instruction, and one that, if faithfully worked, will yield him rich returns.

Whatever faults there may be in the work, can be easily corrected; as to whatever doctrines there may be not in accordance with the general view or with our own notions, we would not hint at a change; honest convictions derived from clinical observation are worthy of respect, and demand the highest consideration. But we trust the opportunity for improvement by a second edition may speedily be afforded to the author. If he will then remember that a single city, although a metropolis, is not the whole country; if he will forget the limited circle which listens to his oral teachings, and address himself to that wider audience which is scattered over a continent; if he will make his book something more of a treatise, and nothing less of a clinical record—he will erect to his name a monument more enduring and more honourable than any obelisk, and add to the medical literature of his country a work of sterling merit. J. C. R.

[1] As an instance, we may mention that in the table of operations already alluded to, Simpson's forceps cases were stated as 1 in 472; this was in 1846. In 1866 he stated that they would amount to 1 in 15 or 20.—*Dr. Thorburn's pamphlet.*

ART. XV.—*Mental Pathology and Therapeutics.* By W. GRIESINGER, M. D., Professor of Clinical Medicine and of Mental Science in the University of Berlin, &c. Translated from the German (second edition), by C. LOCKHART ROBERTSON, M. D., Cantab. Medical Superintendent of the Sussex Lunatic Asylum, and JAMES RUTHERFORD, M. D., Edin. 8vo. pp. 530. London: The new Sydenham Society, 1867.

THE author of this work lays no claim to that practical knowledge of insanity which is obtained by living among the insane, and thus observing the varying phases of their disease with a degree of accuracy and comprehensiveness that can be derived only from such experience. But he says that he once delivered lectures on medical psychology, in connection with his instruction in clinical medicine, generally, and admitted cases of mental disease into his clinique. It is by such means, he says, "that the proper idea, the purely medical, of mental disease, conjoined, however, with a knowledge of the morbid mental symptoms, can first receive that general extension, so very desirable, whereby mere asylum managers can no longer call themselves medical psychologists, whereby that fantastical bombast, sounding of the spiritual world, which is still sometimes apparent in psychological literature, will soon give way to temperate, clear, medical observation." We are not quite sure that we understand the full significance of this passage, but we gather from it that he has fallen upon a more excellent way of studying insanity than that which is pursued by superintendents of hospitals for the insane. We cannot allow this claim, but we are willing to admit that a sagacious, skilful observer may learn more of insanity from the few cases that may chance to come under his notice in ordinary practice, than one destitute of every qualification for observing, though constantly surrounded by hundreds of cases. We might even admit that Prof. Griesinger has written a book on insanity not without some merit, while fully believing that it would have been much better, had he enjoyed ampler advantages of observation than the chance practice of any physician can afford. He may be assured that no amount of skill, no degree of care and attention, can fully compensate for the want of those opportunities that are furnished by an establishment expressly devoted to the insane.

This book is marked—some parts of it especially—by that muddiness of thought and obscurity of expression so common, we are sorry to say it, in the writings of German savans, and which, with the English reader, at least, detracts very much from their merit. It would seem as if their very subjective methods of study often led them to believe their conclusions to be original, merely because they are clothed in vague and indefinite language. Accustomed as we long have been to the most precise use of terms in scientific investigations, we are inclined to distrust any claims to novelty that cannot be clearly and distinctly described. Language is a powerful aid to correct thought; and until this fact is fully and practically recognized by our German friends, they will have failed to take an important step in the path of scientific inquiry. Almost every page of the present work furnishes illustrations of their prevailing fault. The preliminary chapters, though confined to those elementary facts and principles found in every text-book and long associated with certain forms of words, are written in a style most puzzling and vexatious to the English reader. While reading them we

seem to be wandering in a sort of dream-land, unable to recognize the most familiar objects, and wondering what it can all mean. Who would imagine, at first sight, that an old, familiar truth is enveloped in the following cloud of words? "We see that all impressions occurring centripetally, through the senses, converge in the brain, are perceived, assimilated, and excite the mental faculties, and then give rise to new centrifugal acts, owing to the relation in which sense and mind stand to the actions of the motory system." p. 2. If the reader fails to get much light from the following paragraphs, it is not our fault, for we have copied them exactly as they stand; and we might quote a hundred more equally luminous.

"Empiricism must patiently await the time when the questions concerning the connection of the contents of the life of the human soul, with its forms, shall have become physiological instead of metaphysical problems. Meanwhile, would they but desist from the pursuit of unanswerable questions, from striving wildly in science, and from accusing each other of heresy by the mixing up of quite heterogeneous questions. Would the followers and fanatics of materialism but consider a point which appears to me not to have been hitherto sufficiently brought forward in the discussions of these questions. The elementary phenomena which occur in the nerve-masses must be in all men always identical, especially if they be considered (as is now believed by many) as essentially electrical, necessarily in the highest degree simple, consisting of + and —." p. 6. "Any discussion concerning the materiality or immateriality of the mental processes cannot, therefore, in the present state of our knowledge, be decided; it would fall in part, and already in its first premises, together with the question of the internal changes in the activity of the nervous system. All comparison with the imponderables, which stand in a relation analogous to matter, and appear also as somewhat immaterial, provoke however material changes and modifications, are of but little service. The mental or nervous agent has no real analogue in the whole of the universe; the theory, as Locke has already shown, experiences the same difficulties, whether they allow to think the material, or whether they will comprehend the action of an immaterial agent upon matter. That the functions of the soul, moreover, must always be accompanied by material acts, no one denies; this relation is very well developed by Stiedenroth (i. p. 52, and a, a, O); only the idea which participates in the organic accompaniment is to him a real, and known, and—a still more fruitful proposition!—indeed, the more lively the organic accompaniment, the livelier the thought." p. 7. "There is then presented in the perception a similar eccentric phenomenon, a projection similar to what takes place in sensation, not towards the peripheral surface or the outside of the organism—we are conscious of perception rather as of an occurrence within our head—but within the same sphere from which the irritation ordinarily proceeds, within that of sensation. This eccentric projection of perceptions appears to be that which necessitates a constant entrance of sensitive images into them." p. 30. "Those intuitions of movement associate themselves to the evident sensitive perception; but also into the perception, which consists solely in abstract general impressions which are indicated by words (the intelligible perception, § 17), images of movement can also enter. These, however, are then only equally obscure general impressions from large masses of intuitions of movement, which still are not generally separated, but are contained therein bundled together; in order to the realization of the intelligible perception, this aggregation of intuitions must go out in a number of single images of movement previously undetermined." p. 42. "The normal reciprocal action of the perception, whereby, through the ideas actually in the mind, other contrasting, or in general limiting, ideas are awakened, whereby all proceeds with moderate strength and rapidity, so that, in general, a conflict can arise in consciousness, so that thought and reflection, and therewith a survey of past and future, are possible, is best designated as the state of *Reflection*." p. 46.

It is possible that our author's translators have not done him justice,

but we have had no opportunity of comparing their work with the original. They say they have adhered to the literal meaning of the author, and that for the curious reason that "a more liberal rendering would only farther obscure—possibly contravene—the author's meaning." It may be so, though we can hardly conceive it to be possible; but if we are obliged to put up with such uncouth English, we had a right to expect, at any rate, that the sentences would be grammatically constructed and free from obsolete words. If a translator could find no better words to express his meaning than *uninvestigable, markedly, limitingly, expective, dement*, he might very justly fear that he had mistaken his mission. The abundance of typographical errors and incorrect citations of previous paragraphs show that the proof-reader too has but poorly performed his part. With all its drawbacks, however, the book is not without considerable merit, and the reader who is not repelled by the difficulties of the style will be amply repaid for his trouble. If the lack of an intimate acquaintance with the insane has occasionally led him into error, it is highly creditable to his sagacity that he has avoided it so well, and succeeded as he has in recognizing the truth amidst conflicting opinions. He has seldom failed to discern the advance that has been made by recent inquiry, in many points, and he cannot be charged with being narrow or illiberal.

The first four chapters entitled, respectively, "The Seat of Mental Diseases and the Method of their Study," "Preliminary Anatomical Observations," "Preliminary Physico-pathological Observations on Mental Phenomena," "The Elementary Disorders in Mental Disease," contain nothing particularly worthy of note. Many of his views are merely refinements of the closet, some are at variance with facts, and all are vitiated by a certain obscurity of thought which the author himself evidently mistakes for depth of meaning. They are not sufficiently important, however, to be discussed. Most readers, we imagine, will skip them altogether.

In the chapter on "Insanity in general," we find its analogies to dreaming, the magnetic sleep, and febrile delirium, fully and clearly indicated; and so is the psychical process of restoration, when "the old *I* returns uninjured and unimpaired to its former place." He has no faith, very properly, in those apparent restorations of reason which occasionally occur shortly before death in demented patients; nor even in those who, though long insane, have not been so quite long enough to become demented, for he believes that "the past, the future, and the most important relations of life, still remain in obscurity." This view is one of great practical importance, for such cases are sometimes litigated, and a prevalent error of courts, never much disposed to look beneath the surface, is to regard the mental condition as better than it really is.

On "the Diagnosis of Mental Disease," Prof. Griesinger's views are highly intelligent and rational. "The chief point," he says, "is invariably this—that, in the great majority of cases, there appears with the mental disease a change in the mental disposition of the patient, in his sentiments, desires, habits, conduct, and opinions." This he regards as the supreme test, though he admits the difficulty of distinguishing such change, when it comes on slowly, from eccentricity, immorality, capriciousness, or false views of life. In practice, the difficulty is much enhanced by the occurrence of incidents which have the usual characters of vice. In trials involving the question of insanity, great use is always made of this fact by counsel to prejudice the jury against the plea of insanity, and the court not unfrequently sympathizes with the counsel. As if the practice of vice and

immorality necessarily implied the possession of a sound mind, and were always the culpable cause of any mental irregularities connected with it.

The Professor admits that in criminal cases the act itself is sometimes the only evidence of insanity that we have, and he seems inclined to believe that morbid states of mind may exist in such cases without our being able to detect them by any external manifestations. He leaves us in some doubt, however, whether he would ever accept evidence of insanity drawn from the act itself as conclusive; and yet, after the admission just made, he could hardly contend against it. He says that "the symptoms of mental diseases consist only to a small extent of definite, isolated, and unmistakable morbid appearances, and never in any case of directly palpable and physical signs. They depend essentially on the interpretation of the mental acts by an observer acquainted with disorders of the mental functions and their modes of expression." In seeking for indications of insanity, in these criminal cases, outside of the act itself, we might find no definite, isolated, and unmistakable morbid appearances, but only some "mental acts" the exact relation of which to insanity would have to be determined by an expert. A single act may, and in practice often does, furnish stronger proof of mental disease than all the rest of the conduct and conversation of the patient put together. And why may it not be the criminal act as well as any other? Nothing can be more absurdly inconsistent than the usual practice in such cases. A man who has shown no indications of insanity, attempts to commit murder, or suicide, or some other violence, and he is forthwith placed in a hospital, solely on the ground of such act. If, however, he had succeeded in his criminal attempt, then he is placed on trial, and the act itself is to go for nothing in establishing the plea of insanity. We have no disposition to ignore the danger of receiving such evidence as conclusive but this should only teach us caution and patience, and if they are duly exercised no serious mistake need be apprehended. Of all the persons that have been acquitted chiefly because of the insane character of the act, we doubt if there has been a single one whose subsequent history has led anybody to wish that the result of the trial had been different. Can we speak with equal confidence of every conviction that has been procured in spite of such plea? Of course we are not speaking of cases where the plea of insanity was used merely as a convenient substitute for some other excuse not admitted in law.

The chapters on the causes of insanity contain an admirable exposition of the subject, discarding the puerile philosophy by which it has been characterized so long, and thoroughly recognizing the advanced position now being taken by the students of mental pathology. He treats with deserved contempt the too common practice of accepting the opinions of friends respecting the cause of disease, and points out the true course of inquiry in every case. It should "embrace the whole of the bodily and mental antecedents of the individual. It must commence *ab ovo*, indeed from former generations—family predisposition—and minutely trace the bodily development, the habitual state of health, the nature of the diseases to which the patient is subject, and of those which he has already had. Likewise, as regards the mental sphere, we must faithfully and intelligently comprehend the relation of the predispositions and congenital peculiarities of disposition, the degree of education, and the governing inclinations of the individual—his mode of life and views of the world, his outward position and the nature of his thoughts." He agrees with every intelligent thinker in the belief that insanity is seldom if ever caused by any single

incident or event, but is the effect of several agencies no one of which would have been sufficient for the purpose. Considering the increasing prevalence of those habits, fashions, pursuits, emotions, and vices which exert an unfavourable influence on the hygienic condition, such as intemperance, fast living, excessive mental effort, schemes of ambition, sensational reading, &c., our author considers it a fair inference that the amount of insanity has increased with the progress of civilization, though statistics are too imperfect to furnish positive proof.

Hereditary predisposition our author regards as lying at the bottom of the greater number of cases, and as more powerful as a cause of insanity than anything else. It would be hard to find a wider discrepancy of result on what would seem to be purely a matter of fact than is afforded by the statistics of this incident, varying as the proportion of hereditary cases to the whole number does from one twenty-fifth to two-fifths. Some of the reasons for it are very obvious. In the York Retreat, for instance, the history of every patient and the hygienic condition of his relations can be learned with a high degree of accuracy, while in the Bicêtre and Salpêtrière there must always be a large proportion of cases in respect to whose relatives absolutely nothing can be ascertained, and another equally large, no doubt, in respect to whom the little information that is offered is quite imperfect and unreliable. Another reason for this discrepancy is that there is the widest difference of opinion as to what constitutes an hereditary disposition or tendency to insanity. By some no case is considered hereditary unless the disease has appeared fully developed in a parent or grandparent. By others a case is deemed to be hereditary if the disease has appeared in an uncle, aunt, or cousin. The latter course is undoubtedly the more correct, because it better expresses our actual knowledge respecting transmitted tendencies to disease. Why should it be supposed that hereditary insanity must have been preceded by overt insanity in a parent or grandparent? It is not *that* which is transmitted. Neither insanity nor any other disease is transmitted as disease. Is the victim of hereditary gout or cancer or apoplexy born into the world actually labouring under the disease? In the case of insanity, as well as of other diseases, the thing transmitted is what, for want of a better name, we call tendency or predisposition to disease. Hence, the hereditary character of a case of insanity is indicated by the presence of those organic conditions in some progenitor which constitute this tendency, and which may not be fully developed until it has reached the next generation. The consumptives whose parents died of consumption are far outnumbered by those whose parents possessed a tubercular diathesis only. The same law of transmission governs both cases, and the same theory should explain the facts in both. The presence of this tendency or disposition to insanity—this germ or taint, to use the current terms—is usually indicated by characteristic signs. We do not say always, though a practised observer, we apprehend, seldom fails to discern them. Our author recognizes among them "a striking eccentricity or extravagance of character, and a morbid exaltation of the passions," and also "a weakness of character and excessive passionateness" that, under favouring circumstances, beget criminal acts. We would add that in the larger number of instances the "eccentricity," the "extravagance," the "exaltation," is far from being very demonstrative. It may be nothing more than a peculiar way, a lack of proportion and perspective in their mental manifestations, and a kind of unreasonableness which is the opposite of plain, simple common sense. The world scarcely notices these traits;

or if it does, is scarcely aware of their significance. And yet they indicate that psychological condition which, in a subsequent generation, is transformed into insanity rightly designated as hereditary. We are glad to see that this matter is getting to be better understood. Within the last dozen years it has been clearly recognized by all the ablest writers on the disease; and by Moreau de Tours, the ablest of them all, it has been considered under relations of startling significance. Maudsley calls it, in his late work, the *insane temperament*, and lays more stress upon it than it has received from any other English writer. And it is high time that it should be properly appreciated, as it certainly has not been in several trials here and abroad where it was, apparently, the parent of crime. To ignore a condition of so much medico-legal importance, is but a poor sort of conservatism in a progressive department of science.

In this connection our author speaks of the "so-called nervous constitution" as a strongly predisposing cause of insanity. We are not disposed to question its existence, nor its agency in the development of insanity, but many of the traits which he attributes to it are themselves results of the special morbid tendency. Extravagance, excess, whims, frivolity, irregularity, low spirits, are neither collectively nor individually the attributes of the nervous temperament as described by physiologists, but they do indicate that organic condition which, generally if not always inherited, is essentially abnormal and liable to pass into unequivocal disease. In fact, his own language implies as much when he says that "the individual, with his whims and unusual modes of reaction, steps out of the ordinary beaten path of humanity, and passes in the world as an original, singular man." Such an individual is certainly something more than nervous.

Prof. Griesinger treats of drunkenness and onanism as causes of insanity, but expresses no opinion of his own as to their comparative potency, and attempts no explanation of the discrepancy of different observers on this point. Prichard refers half the cases in England to the former vice. Webster and Morison limit its effect, in regard to the patients at Bethlehem, to one-eighth or one-ninth. In Germany the proportion is reported as ranging from one-sixth to one-ninth. Dr. Rush fixed upon one-third as the proportion in this country, while by others this figure is considerably reduced. This kind of discrepancy is very puzzling to most persons, embracing even medical men not much versed in such inquiries. The mystery vanishes when we come to look a little more closely at it. Intemperance is a vice so common and in such bad repute that, very naturally, it is made the scapegoat of as much mischief as can be fastened upon it with any show of reason. It is admitted to be a cause of insanity. The exact measure of its agency is determined by a multitude of accidental circumstances. The observer perhaps partakes of the popular prejudice, or at least passively receives impressions from those who do. The patient is accustomed to drink; no other cause of insanity is apparent; and forthwith the disease is attributed to intemperance. In the face of such a stubborn fact, it would seem to be quite needless to undertake that extensive inquiry into the physiological, psychological, and pathological history of the patient, prescribed, as we have already seen, by Griesinger, in order to find out the cause of his insanity. And so with onanism. That too is admitted to be capable of impairing the mental faculties. As it is universally practised by boys, more or less, it is always at hand to serve as a cause of insanity in young people, when no other is particularly obvious. Another reason for this discrepancy may be found in the doctrine laid down by the

author in common with the most intelligent observers, that insanity is usually the offspring of several incidents acting together. If this principle had been always kept in mind, search would have been made for other agencies besides the two above mentioned, and they undoubtedly would have been found. In regard to onanism there is a peculiar source of error that will account for much of the high estimate placed upon it as a cause of insanity. Many a young man who, in one way or another, loses his ordinary measure of vigor and elasticity, and experiences some uneasy sensations, learns for the first time perhaps that the habit, to which he knows he has been addicted, frequently impairs both the bodily and the mental health. He becomes alarmed. He reads the popular books about health and disease, from which he learns that his symptoms are precisely those that are caused by "secret vice." He reads advertisements, he consults quack doctors who pander to his fears, and begins to take medicine. By this time he has become decidedly nervous; he thinks of nothing but his health; abandons his duties, and is very wretched. At this stage of the case he applies to his physician, who incautiously takes it for granted that he has practised the secret vice *excessively;* and if the patient continues to go on from bad to worse, until he becomes decidedly insane, the insanity is attributed to onanism, and so figures in the tables of causes when he reaches the hospital. An intelligent investigation would have shown that the patient had done no more than what almost every youth does; that the practice had never been excessive; that it had little if anything to do with his ailments, which, originally of a trivial kind, had finally been rendered, by fright and injudicious advice, chronic and incurable.

Within a few years, observers have been struck by the frequency with which insanity and phthisis occur together, insomuch that a very large proportion of the chronic insane die of the latter disease. In every hospital for the insane may be found patients who, within a few weeks or months of the attack, are found by auscultation to present the signs of extensive tubercular deposit, which had given no other token of its presence; who may continue till the day of their death exhibiting but few of the rational signs of phthisis. In some of them the mental disease disappears; when the pulmonary affection may either proceed to a fatal termination, or remain in abeyance for years, to be then succeeded either by a new and fatal aggravation, or by another attack of insanity. This curious conjunction of morbid actions should be well understood by all who are concerned with their treatment, in order to avoid the very serious mistake of doing more harm than good by their remedies, and of giving a prognosis that may be followed by fresh disappointment and grief. Prof. G.'s paragraphs on this subject contain a very satisfactory expression of our present knowledge respecting it, and are very creditable to his industry.

Severe injuries of the head he regards as a potent cause of insanity, though the effect may not follow until years afterwards. We are not disposed to contradict this statement, but it cannot be denied that the whole matter is involved in great obscurity. And this obscurity is not much relieved by the statistics of Schläger, who, among 500 patients, discovered 49 that had become insane in consequence of such injuries, in four of whom the disease did not appear until ten years afterwards. Certainly, one case in ten—as this number is very nearly—cannot truly express the amount of insanity in the world derivable from injuries of the head, and we can scarcely conceive of any local circumstances sufficient to account for it in any community. Where the injury is immediately followed by

any change of temper or disposition, the connection between the first and last in the series of events is obvious, but otherwise we are hardly warranted in going back eight or ten years in search of a cause that has been perfectly dormant all that time. The question is not one of simple curiosity merely, but has important medico-legal bearings, and that is an additional reason for avoiding hasty generalizations.

Without troubling himself to discuss the methods of classification already in use, or even giving them a passing notice, our author propounds his own arrangement. He makes of mental diseases two grand groups, in one of which "the insanity consists in the morbid production, governing, and persistence of *emotions* and *emotional states*," and in the other, of "disorders of the intellect and will, which do *not* (any longer) proceed from a ruling emotional state, but exhibit, without profound emotional excitement, an *independent*, tranquil, *false mode of thought* and *of will*, usually with the predominant character of mental weakness." We presume that one familiar only with English and French writers could scarcely conceive what forms of disease would be embraced in these respective groups. And small clew to the secret would be furnished by the farther statement that "insanity is a *curable* disease only so long as it is confined to the first group of *primitive* (emotional) mental disorders, and that it becomes *incurable* with the development of the secondary lesions which constitute the second group." We must help the reader by telling him, that the first group includes melancholia, mania, and monomania; the second, chronic mania and dementia. The first member of the first series, melancholia, "represents conditions of depression of the self-sensation and self-confidence, of concentration upon some painful emotion, of *morbid self-concentration*, and, in the highest degrees, of even incapacity for making the slightest exertion;" while "the fundamental affection in the maniacal states consists chiefly in a derangement of the motory side of the soul-life, the effort, and of such a nature, that the latter having become free, unrestrained and considerably increased, the individual consequently feels impelled to give some outward manifestation of his powers. From this tendency to an exaggerated psychical movement from within outwards, from this augmented energy and more extended range of the efforts, from this extravagance of the will, which constitute the centre-point of maniacal derangement, spring, as from a common source, those two forms," viz., mania and monomania. The essential difference between these two forms, is, that "the excitation of the motory side of soul-life," which characterizes the former, "is transformed," in the latter, "into *extravagant volition in the form of particular delirious conceptions*" marked by "inordinate vanity" and "constant over-estimation of self." It is admitted that in the former the patient sometimes acquires delirious conceptions, but they rush along with so much tumult and precipitancy, that they have no time to get fixed in the mind, as they are in monomania by reason of the less rapid succession of ideas. There is much more to the same effect on this point, but we doubt if our readers would get a better idea of the meaning, were we to quote the whole of it. There remains "a third state of mental exaltation, more apparent than real, which is never found except in monomania, and which consists in this—that the anomaly of the psychical self-sensation, this overweening disposition which has originally given origin to all those false conceptions by which the patient seeks to explain his state, disappears more or less completely; but the false conceptions themselves, the exalted ideas which the individual entertains of his own merits, let loose from the foundation

on which they were erected, persist, and as constantly present errors of judgment, completely govern the whole intellectual life of the patient." This is called *Partial Dementia with Exaltation.*

This is not the sort of classification which might have been expected from one daily and hourly conversant with the insane, because it abounds in a blending together of incongruous facts that are never associated in actual life. A classification, at the best, adds nothing to our knowledge; but if it associates facts by false relations, then it misleads the student, and harms rather than helps him. And this is just the charge we make against our author's, that, if implicitly followed, it would be the means of conveying some very erroneous ideas respecting insanity. The radical distinction of depression and exaltation, upon which one of the divisions is made, is far from being sufficiently uniform and precise for this purpose. He himself admits that most cases of insanity begin with depression, even those which end in excitement. We know that in a host of cases, these two conditions alternate, often within very brief periods; and that in a few, the patient cannot be said to be excited or depressed. Under which head are we to place the numerous cases of what the French call *folie circulaire*, where the patient for a period is plunged into the very depths of dejection from which he rises to the topmost heights of confidence and hope, there to remain for an equal period, and thus complete the vicious cycle that may be again and again repeated?

The Professor is not more fortunate in the characteristic features which he assigns to the two states. Melancholia is marked by "self-concentration," "depression of the self-sensation," "incapacity for making the slightest exertion;" while in the maniacal states the patient "is impelled to give some outward manifestation of his powers." These traits are derived from the picture made out of those demonstrative cases that leave a lively impression on the mind; not from careful observation in the wards of a hospital. They are never without patients in the very depths of misery and despair, who are incessantly restless, destructive, and even violent. Indeed, the Professor recognizes this fact himself, but he makes no attempt to reconcile it with his definitions.

The sense in which he uses the term monomania is as contrary as possible to accustomed usage and to etymological signification. By all French, English, American, and, we had supposed, German, writers, it has been restricted to cases manifesting a single delirious conception, moral or intellectual. And the tendency has been, as our knowledge of mental diseases has advanced, so to narrow the range of its application as to make the continuance of its use in classification of questionable propriety. The mental disorders which our author refers to monomania are far from being confined to a single idea; indeed, he does not pretend that they are. He describes them as differing from those of mania only in the circumstance that they are unaccompanied by fury or raving, and as a consequence thereof, that the ideas are more definite and persistent. And his attention was not fixed exclusively, as one might suppose at first thought, on those cases where the mind is a prey to one or a few delusions predominating over the rest. His field of vision has obviously embraced a much wider range of mental disorder, for we recognize in his descriptions the traits of *folie circulaire*, general paralysis, and almost every other form of insanity except proper monomania. "The patient rejoices," he says, "over his great mental (and bodily) well-being; he feels himself richer and more free;" he easily "becomes irritable and violent;" is "impatient and angry"

when opposed; he is fond of using "grand, high-sounding words, the most brilliant images, the highest possible numbers (thousands, millions, &c.);" he possesses "inexhaustible resources;" occupies "a high position." "To this class belong those patients, so numerous in asylums, who believe they are generals, Napoleons, millionaires, reformers of the world, gods, and heroes; the many female patients who are beloved by kings; those who believe they hold frequent and intimate intercourse with the Deity." Hallucinations "persist, foster, and essentially strengthen the delirious conceptions. The patient, for example, sees an angel bringing to him a message from heaven; hears voices commanding him to commit certain deeds, or communicating unintelligible nonsense which he believes to be some divine mystery; worthless objects appear precious, &c."

But the Professor is not done with amazing us with his ideas of monomania. Its essential, fundamental disorder is "persistent over-estimation of self!" From this, as a necessary consequence, spring all the accompanying moral and intellectual disorders. He does not mean that kind of egotism which is implied by the patient's thinking only of his own concerns and referring everything to himself, for that is manifested more strongly in melancholia. He uses the language in its ordinary, popular sense, and by that he must be judged. The idea of extraordinary powers and possessions so common in states of maniacal exaltation does not necessarily imply an excessive self-esteem, any more than it does in states of depression. The poor creature who believes that if he eats the food placed before him the whole world will perish of starvation; or if he makes water the earth will be deluged, believes himself to be the subject of extraordinary power, but he cannot be charged with an excess of self-esteem. On the contrary, he is the most miserable of men, without a thought or feeling in his head calculated to promote his self-complacency. It would be sinning against the first principles of philosophy to suppose that this idea of extraordinary powers can spring from such opposite sentiments as the self-esteem of one, and the self-abasement of the other. If indeed there were any relation between the overweening self-estimate and the idea of peculiar endowments, it is not very obviously one of cause and effect. The grand delusions which occur in the states of maniacal exaltation often spring more or less directly from habits, tastes, speculations, that had long been a part of the mental experience, though the bond of connection may not be very apparent. Large self-esteem, original or acquired by disease, may give a tone to the delirious conceptions, but we see no warrant for regarding it as the primordial germ of all the fancies and follies of monomania. But even admitting —as we do not—that they bear to each other the relation of cause and effect, it is just as likely as otherwise to be precisely the reverse of that which our author has assigned. A person who is conscious of possessing remarkable gifts or privileges might naturally feel some risings of self-esteem on that account. The mistake underlying all this theory is that of supposing that the overweening estimate of self precedes the delirious conceptions. Self-satisfaction, self-complacency, undoubtedly may precede them, but this is a very different feeling from that of excessive self-estimation. It is but a phase of that exaltation which characterizes this group of mental diseases, and indicates the general quality of the nervous system, rather than the activity of a particular moral sentiment.

Thus far we have not been profoundly impressed with the Professor's skill in classification. What follows is not calculated to change that impression. The second general group of mental diseases embraces, as we

have seen, chronic mania and dementia. They are called States of Mental Weakness, and are farther designated as incurable, the first general division of mental diseases being into curable and incurable. This seems to be but a puerile foundation for a classification of mental diseases. If the subjects of one division are mentally weak, the presumption is, that those of the other division are mentally strong. In the former, unquestionably, the memory is poor, the judgment impaired, the perceptions dull, the affections gone, and the thoughts succeed one another with little logical sequence—all, expressions of mental weakness, we admit. But in the latter, also, there is a diminished power of endurance, as well as of application to any pursuit or duty, an inability to discern nice relations, or grasp remote contingencies—a condition of mind that may be fairly termed weakness. Chronic mania, which embraces a very large proportion of the insane, is a term expressive of some relation of time, and in ordinary use, is not without its convenience, but it is altogether too vague and indefinite to serve as a distinction between one class and another. The point to be first settled is, within what period mania becomes chronic, and, certainly, nobody would undertake to do that. Every observer knows that many a patient, after presenting, for several years, the usual characters of chronic mania, is restored to reason and the use and enjoyment of life. It would seem, in fact, as if there were no place for chronic mania in a class of mental disorders characterized like this. It could properly belong to it only by reason of having lost the characters of mania, and taken those of dementia. Unconsciously to himself, probably, the author had in his mind two different grades of the same affection, and his meaning would have been more obvious if they had both been called by the same name.

The descriptions of the particular forms of disease, melancholia, melancholia with stupor, hypochondriasis, mania, dementia, are well drawn up, and convey as clear and definite an idea of them as one would expect to obtain from books. They are illustrated and enlivened by cases, which, many would say, are out of proportion to the dimensions of the book. In regard to the vexed questions of morbid psychology, he is not so outspoken as we could have wished, and some of them have been passed over without that array of facts and minute consideration of them which their importance deserved. But his remarks upon them are judicious and liberal, and vitiated by none of the bitterness of controversy which is so apt to creep into scientific discussions. Didactic rather than argumentative, he is contented with a succinct expression of his views, without much reference to the views of others.

On the subject of moral insanity, which, for the last twenty years or more, has held so large a space in the books and other publications on insanity, our author says comparatively little, and the exact meaning of that is not always very clear. Under the head of *Melancholia with destructive and murderous Tendencies*, he describes those cases in which "homicidal impulses, suddenly and without external motive, arise in persons who have been hitherto of a lively, joyous, and loving disposition, and incessantly intrude themselves upon their thoughts," and also that other group of cases "in which such impulses originate in those who have been long overwhelmed with grief, concentrated in self, and have been actual misanthropes." He regards such persons as irresponsible, but scarcely alludes to the question so much agitated of late, whether the moral derangement is necessarily accompanied by some degree, though ever so little, of disorder of the intellect. In the same light he regards those cases of morbid

impulse to incendiarism, occurring chiefly in the young, but dislikes the term Pyromania, which, he says with a grim sort of sarcasm, "possesses at least the advantage of previously settling the object of discussion." The cases designated as Moral Insanity, Folie raisonnante, Mania sine delirio, he refers to "slight and chronic melancholia" of which "they represent the actual form."

Acute Dementia, for the most part, he regards as equivalent, and nothing more, to Melancholia with stupor, but he admits that it may be occasionally observed. This we apprehend to be a correct expression of the facts. While the most of those dumb, passive, inert creatures, remaining, for hours, precisely where and as they were put, without even the cognizance of the most natural wants, are conscious of what is going on around them, and are revolving some painful delusion, there are some, apparently very like them, whose mental functions are suspended, for after recovery they look upon this period of their existence as a complete blank.

The account of the phenomena of recovery might well have been more full and particular, although so far as it goes it is correct and instructive. Recovery may be sudden, he says, "or gradually arrived at after progressive diminution of the symptoms," but he does not warn the reader that a sudden restoration of reason is generally unreliable, and should not be allowed to raise unduly the hopes of the friends. When mania comes on with some degree of suddenness and violence, there frequently occurs, within the first month or six weeks, a remission of the disease, having all the appearance of perfect recovery, and regarded as such by the incautious observer. This phenomenon, first distinctly noticed by Esquirol, and verified by many if not all, who have had charge of the insane, is one of too much practical importance to be lost sight of, if we would avoid mistakes of the most serious nature. It is too brief to lead to much mischief to an inmate of a hospital, but in private practice it has been the occasion of indulgences and privileges that have entailed very disagreeable consequences. No physician who has had much personal charge of the insane is anxious to see a very decided improvement in his patient within the first month, for, though it may occasionally endure, it is far more likely to be followed by relapse and an aggravation of all the symptoms. Generally, recovery is a gradual process, one delusion after another giving away, one fancy or vagary after another replaced by clear conceptions, and the affections after a while resuming their accustomed place. It must never be forgotten that this process often seems to be completed long before it really is. We would not except from the scope of this remark very many of those who are discharged from our hospitals as recovered. Subsequently, such patients will admit that they were not quite well when discharged and that disease lingered about them in the shape of some false notion, some unfounded prejudice, some liability to excitement. There is another class of patients who are restored sufficiently to resume their place in the world and engage in their customary duties, who never recover their proper integrity of mind. They are unable to look upon their condition while lying in the shadow of disease, as everybody else does. They refuse to admit that they were ever really insane, though they may have been a little nervous at times. They blame their friends for committing them to a hospital or otherwise interfering with their movements, and never cease to entertain feelings of intensest bitterness towards all who were concerned in the measure. While utterly blind to the incidents that rendered such interference necessary to save them from ruinous transactions or mortifying

exposures, they torture the most natural and innocent acts of others, meant for their good, into instances of abuse and insult. Restrained by no scruples of veracity—for this is among the virtues that are first overpowered by the intrusion of disease, and the last to regain their normal place under healthier conditions—they not only misrepresent and pervert actual occurrences, but, in a manner so plausible and circumstantial as to deceive all but the very few who are professionally conversant with such persons, they state things that never occurred at all. These are the people who go about the world reading lectures and writing in newspapers against hospitals for the insane, prosecuting their friends and physicians in actions of conspiracy, malpractice, or false imprisonment, and with a perseverance worthy of a better cause, labouring with legislatures for the enactment of laws the most adverse to interference with the liberty or property of the insane. This is one of the facts of insanity which no text-book on the disease should fail to record, for few surpass it in practical importance.

The chapter "On Several Important Complications of Insanity" contains a very good *rêsumê* of the present state of our knowledge respecting general paralysis and epilepsy. In the account of the former, there are two or three particulars the entire accuracy of which we should question. The muscular affection is said to be "even at the commencement very extended, indeed almost general, although at the same time very feeble." This, certainly, does not agree with the results of our own observation, which would lead us to believe that for weeks and months after the tongue begins to be affected, no other muscular affection may be observed. Even the next most frequent one—that which is witnessed in the lower extremities—may not appear until some time afterward. "The slight tremor" which is said to "render the movements of the upper extremities irregular, awkward and constrained, at the commencement," we are inclined to consider as an exceptional, rather than a common occurrence. We would make the same remark respecting the statement that, at the commencement, "it is rare that a melancholic stage does not exist." These things may seem, at first sight, hardly worth mentioning, but so many questions of great practical importance are often involved in the diagnosis of general paralysis, that inaccuracy of statement respecting its initiatory symptoms is no trivial matter.

In treating of the medico-legal aspects of epilepsy, Prof. Griesinger has taken a step considerably in advance of the common mark. He believes that "a morbid mental state may exist and have influence, yet present no external manifestation," and, in the spirit of this belief, he was constrained to say in a case of homicide committed by an epileptic, "that neither before, nor at, nor after the deed, did we find certain signs of mental disturbance, yet, notwithstanding, it was possible that this disease allowed influences to act on the phenomena of volition, which obscured reflection and weakened the freedom of the will, without, however, manifesting themselves by any external symptoms." In this opinion we believe he was correct, and we also believe with him that the doubt which it implies as to the responsibility of the accused should inure to his benefit. We have been too much in the habit of considering epilepsy as incompatible with responsibility only in its more demonstrative phases—those in close connection with a fit—regardless of those mental impairments which represent the effect of the long-continued action of the disease, and which escape the notice of the casual observer.

The chapters on the Pathological Anatomy of Mental Disease contain

the results of modern investigation, clearly described and conveniently arranged. For a task implying so much labour and research, the author is richly entitled to the gratitude of the student. To some of his theoretical views we are hardly prepared to yield unqualified assent, though they are not so clearly expressed as to prevent entirely their being misunderstood. He accepts it as a settled fact that in many cases the most skilful autopsy reveals no lesions or changes within the cranial cavity, but this fact does not warrant the conclusion, he thinks, that such lesions when present are not the cause of the mental disorder. This position he undertakes to strengthen by what he regards as an analogous case, but which seems to be nothing more than a paltry chopping of logic. Because cough and dyspnœa occasionally exist without anatomical changes in the lungs, we do not say when they accompany pneumonia that they are not the results of this pulmonary affection. Very true; but what we do say is, that cough and dyspnœa result from other conditions than that of pneumonia or any other structural change. He admits that the lesions we discover after death are not "the *immediate* cause of definite psychical anomalies, of this or of that form of delirium; or that the *individual symptoms* of the mental derangement are the direct result of the anatomical lesions." He also admits that various pathological lesions in the insane have no connection with the mental disease, but how they are to be distinguished from such as are thus connected, he does not inform us. We are gravely told, however, to "investigate what, according to experience, the post-mortem appearances in the insane are, and then, by comparing these lesions and the processes which lie at their foundation with the symptoms observed during life, to arrive at comprehensive anatomical views in regard to these cerebral affections!" In answer to the question whether there is any specific alteration in insanity, meaning thereby a change which everywhere must invariably and in the same manner be present, he says, "it must not only be answered in the negative, but considered as *a priori* false," for the reason that such diverse affections as melancholia, dementia, &c., cannot possibly spring from one and the same organic change. By the same sort of logic, he would say that tubercle, so called, is a very different thing in the uterus or the intestines, from what it is in the lungs, because it gives rise to a different order of symptoms. His own statement of the matter, viz: that certain anatomical changes necessarily produce "mental disturbance," is liable to the same objection, for he does not pretend that "diffuse inflammation of the gray substance," "extensive meningitis of the convex surface," "acute œdema of the greater hemispheres," "rapid bilateral atrophy of the convolutions," &c.—the changes that he particularly instances—are always respectively accompanied by exactly the same form of "mental disturbance."

We see nothing unreasonable in the idea that insanity is caused by a specific organic change very different from those lesions that are usually observed after death. We have not yet learned what it is, for it is not discernible by any of our present means of observation; but there can scarcely be a doubt that in the inmost constitution of the organ—in the extreme vessels, or the cerebal cells—there occurs some abnormal condition that gives rise to mental disorder. The inflammations and congestions and effusions and thickenings witnessed at the termination are the results of chronic disease, having nothing to do with its production. If, by some clairvoyant power, we could inspect the brain during life, in the early stages of insanity, we should discern no sign of their existence. To talk

of their being the cause of insanity is as absurd as it would be to say that the wear and tear of the engine is the cause of its motion.

In the chapter on Prognosis, the signs and conditions favourable or unfavourable to recovery are indicated in a manner that shows a close and careful study of the disease. It might have been considerably extended, but we are not quite sure that it would have been proportionally useful. Such particulars can be properly appreciated only by those who have had much practical acquaintance with the disease; and they do not need them.

In the chapter on Therapeutics, the prevalent methods of treatment are well presented, and the author's remarks are eminently judicious. It may be profitably read by all who are charged with the care of the insane—more so by such, we imagine, than by the young physician who finds himself called upon, for the first time, to prescribe for an insane patient. He evidently has but little faith in medication, and makes no attempt to assume a virtue he does not possess. The specious proposition that insanity being a disease of a bodily organ should be treated by drugs or other medical appliances, as other disease are, beguiles him neither into extravagant commendations of this or that thing, nor into those vague utterances that seems to imply a great deal of reserved skill, but scarcely help the reader in his practice. As some other diseases may be best treated with little medication so may insanity, while incalculable benefit may be expected from the use of moral means—those which are applied directly to the mind. Our author's remarks on this topic show that he well understands the relations that exist between such means and mental disease, and also the conditions by which they are liable to be modified. So much common sense is not always seen in this connection, and as seldom do we see so keen an insight into the ways of the insane mind. We wish that our space allowed something more than a bare mention of the principles that lie at the foundation of all correct moral treatment. No good is done, he says, by directly opposing the morbid dispositions, feelings and ideas; for the insane will not receive advice nor tolerate opposition. Quite as useless and even more injurious is any attempt to overcome delusions by logical reasoning; and passionate discussion only makes the matter worse by inciting the patient to justify his views and seek reasons for them. Morbid ideas are not to be subdued by any kind of proof or evidence. To spread all his wealth before one who thinks he is ruined, to pull down a wall in which another fancies his tormenting enemy is hid, would only irritate them and call their attention more forcibly to their false ideas. The ingenious artifices sometimes used to convince the patient of his errors seldom accomplish the purpose. They more often irritate him by the deceit, or, at best, effect only an exchange of delusions. Strong moral shocks and violent emotions have been used to excite a salutary diversion of thought or feeling, but the little good that has been derived from them is but a poor compensation for the mischief they are likely to produce. Not less injurious than any of these practices, is that of assent to or sympathy with the delusions of the patient. Such assent only confirms him in their belief, and he may afterwards appeal to it. When the physician finds himself unable to avoid the expression of his opinion, as it not unfrequently happens, then he should give it, gently but firmly, without concealment or disguise. The best means for weakening the delusion, is that of *mental diversion*, as it may be called, effected by employment, amusement, judicious conversation and suitable reading. None of these is so efficacious as work, especially work in the open air, to those accustomed to labour, and the more steady and methodical it is, the better

for the patient. But in the acute stage of the disease it should be cautiously used, because then it may become a source of excitement. Promiscuous dancing parties are not commendable, and it is added, with a delightful naiveté, that "in a great German city the newspapers annually contain the announcement of a brilliant ball at the lunatic asylum, with the insulting intimation that the company was not disorderly." Religious ministrations are ineffectual as a means for promoting recovery; and in some forms of melancholia the propensity of the patient to distort whatever he hears into an occasion of disquietude renders it necessary to use them cautiously and with some knowledge of the workings of the diseased mind. Clergymen get possessed with the idea that the truths of the gospel can hurt nobody, and may be profitably dispensed under all circumstances. It is obvious that those who are impatient of advice on the subject and insist upon the correctness of their own views, are liable to do harm as well as good. To obtain the greatest possible benefit from all these means, the removal of the patient to a hospital is necessary in the great majority of cases, for there only can they be applied with the ease, promptness, and regularity that will insure success. I. R.

ART. XVI.—*On the Pathology and Treatment of Albuminuria.* By WILLIAM H. DICKINSON, M. D., Assistant Physician to St. George's Hospital and to the Hospital for Sick Children. 8vo. pp. 265. London: Longmans, Green & Co., 1868.

THIS work is by an author already well known through several able and interesting articles. It is a very favourable specimen of a class of works, yearly becoming more necessary, which combine a theoretical and clinical discussion of some one important subject.

The group of diseases which is the subject of the present volume certainly possesses great interest, and the author, in discussing them, has conjoined to a clear and impartial *résumé* of the knowledge already accumulated, a fair amount of original researeh and a series of well reported and highly illustrative cases.

Those diseases only of the kidneys are considered, which declare themselves by albuminous urine, the author intending, at some future time, as we learn from the Preface, to treat of the remaining disorders to which the kidney is liable.

The microscopic changes which occur in the kidney receive their full share of attention, and the first chapter contains some excellent advice, in regard to the necessity for observers to familiarize themselves with the normal appearances of these organs, and with those changes which are compatible with health. The author himself gives the results of the examination of 68 apparently healthy kidneys, and states that in but comparatively rare cases were the tubules and epithelium found typically healthy, the cells being frequently found opaque, cloudy, granular, fatty, variously coloured, or even small, irregular, and crumbling.

It should be remembered, however, that although we may find in the kidney, as in other organs, which have shown no impairment of function, slight degrees of almost every pathological change of the gland cells, such

alterations can scarcely be considered to be without significance. Thus, it is true that in many chronic diseases, unattended with symptoms of renal disorder, the renal epithelium may contain oil; but certainly in such cases, it must be held that the integrity of the organ is impaired, and that probably its ability to perform its function depends chiefly upon the less degree of functional activity demanded of it in the course of such wasting diseases. And thus, on the contrary, as the observations of Dr. Dickinson confirm, it is rare to find, after acute local diseases unattended with symptoms of renal disorder, any noticeable alteration in the renal epithelium or tubules. Leaving out then the mere alterations of the epithelial cells, as not absolutely reliable evidences of disease, the author divides diseases of the kidney into three classes, according as they affect the secreting tubes with their epithelial, constituting Tubal Nephritis; the interbular fibrous tissue, constituting granular degeneration; or the bloodvessels primarily, as in the so-called amyloid degeneration. According to this view, fatty degeneration always occupies a secondary place in the tissue changes; the epithelium frequently becomes fatty as the result of tubal nephritis, but this is not the primary change, but the effect of an altered state of the nutrition of the cells, consequent upon the inflammatory stage. This entire exclusion of fatty degeneration as a separate and essential form of renal disease appears to us, however, somewhat too absolute.

A short chapter follows upon albumen and casts, in which the presence of albumen in the urine is recognized as being due to the admixture of serum which has passed from the bloodvessels into the urinary ducts. The conditions under which this occurs are mainly due to: 1st. Congestion; undue determination to the vessels supplying the glandular structures, as in cardiac disease or from renal irritants; 2d. A specific change in the arteries, as amyloid degeneration, which renders their walls unnaturally pervious; 3d. A loss by the secreting tubes of their epithelial lining in consequence of which they readily yield passage to fluids which otherwise could not traverse them unaltered.

In this summary no account is taken of those cases whose occurrence can scarcely be doubted, in which, although a slight degree of congestion may coexist, the chief cause of the escape of serum is some alteration in the blood itself.

The appearance of casts in the urine in like manner is attributed to the escape of fibrin from the capillaries, which coagulates and entangles whatever contents may be in the tube, whether blood, pus, or epithelium. The fibrin may escape from the Malpighian tuft, from the denuded wall of a tubule, or even from the wall of a tubule which is merely the seat of disturbed epithelial growth.

The author then proceeds to the consideration of various forms of renal disease, beginning with acute tubal nephritis. In this affection, which is strictly a renal catarrh, and corresponds to Johnson's Acute Desquamative Nephritis, the inflammation is limited to the mucous membrane of the tubes, and there is a rapid proliferation of cells, which may be either natural or fatty, or appear as pus corpuscles.

In cases which do not soon terminate, the disease becomes chronic and results in the production of the well-known large white kidney. A good description of the pathological anatomy of this kidney, both in the acute and chronic stage follows, but we will only allude to those points which are essential in the diagnosis of this from the two other forms of renal disease.

In the large white kidney the cells are very frequently fatty, and the tubules are either obstructed by the cells or may contain fibrinous casts; in places, they are found dilated. The capsule of the organ is thin and readily removed, and there is no increase of fibrous tissue either between the tubules or around the Malpighian body. This form of kidney generally remains large and smooth to the last, unless albuminoid change is superadded, bringing with it gradual loss of bulk and producing the small smooth kidney; in no instance, however, has the author known the loss of the contents of the tubes to be sufficient to reduce the once enlarged kidney below its natural bulk. This point will be again alluded to under the head of granular degeneration.

The predisposing causes appear to be sex, the disease being most frequent in males, even among children; and early life, the disease being common after the 2d year, but rare after the age of 40, and almost unknown after that of 50 years. Gout does not in the least predispose to it. The exciting causes are far more numerous and interesting, and are thus enumerated:—

1. Circumstances which throw upon the kidneys the work of other glands—thus cold to the surface acts by checking the perspiration; obstruction to the escape of bile; destruction of one kidney, by throwing double work upon the other (?)

2. Diseases which develop a material which acts as a renal irritant; scarlatina, measles, etc.

3. Matters taken from without, which act as renal irritants; turpentine, alcohol, cantharides, arsenic, etc.

Among adults, cold is undoubtedly the most frequent cause. It acts most injuriously when there has been some preceding cause of exhaustion, or when applied during sleep, when the body is more easily affected. The cold is also usually protracted and applied during free perspiration. This cause is not so active either in arctic or tropical climates, as in moderate ones. The reason of this is of course to be found in the general fact that those organs are most apt to be affected by the application of any morbific cause which are in the highest state of functional activity. Thus in arctic temperatures, where the function of respiration is usually active, there is a vast preponderance of diseases of the respiratory apparatus; in tropical regions, on the other hand, it is the alimentary canal and large glands in connection with it which suffer most; whilst in temperate climates, where the skin and kidneys are very active, the sudden and marked changes in temperature which so frequently occur, tend to abruptly check the cutaneous secretion, and thus induce congestion of the kidneys which but too often eventuates in inflammation. The form of nephritis thus occurring is perhaps the most rapid and congestive known; and the epithelium, according to the observations of the author, is especially apt to become fatty.

In children, on the other hand, scarlatina is by far the most frequent cause of this disorder, the kidneys being irritated by the specific poison, which is partly removed by them. The action of external cold, however, often serves as the immediate exciting cause, especially during desquamation. Albuminuria has also been observed during the course of, or as a sequel to several other diseases. Thus it has been known, in a few cases, to follow measles; in diphtheria the urine is albuminous in even a larger proportion of cases than in scarlatina, though here the albumen appears earlier in the course of the disease, is unattended with any marked diminution in the urinary constituents, or with constitutional symptoms, and nearly always

disappears during convalescence. Albumen has also been detected, and usually with casts, in the course of erysipelas, typhus fever, variola, pyæmia, cholera, acute rheumatism, and in affections of the liver attended with jaundice. In all of these cases, however, though the presence of albuminuria is invariably an unfavourable sign, the affection of the kidney rarely becomes chronic and incurable.

Among irritants foreign to the system which appear to act as causes of this form of nephritis, alcohol, whether taken in substance or inhaled in the form of vapour; cantharides, whether taken internally or absorbed by the skin, and turpentine, are specially active. The observations of Dr. S. Weir Mitchell relative to the production of œdema, occasionally associated with albuminuria and tube casts, by the use of arsenic, are referred to.

The course of this variety of renal disease is then well sketched both in its acute and more chronic forms; and here, as in other portions of the work, the subject is illustrated by interesting statistics drawn from the note-books of St. George's and the Children's Hospital.

It seems that marked hæmaturia occurs in nearly one-half of all fatal cases; that frequency of micturition is much less common; while œdema is an almost invariable symptom; and dropsy, in the form of ascites and hydrothorax, stands next in frequency. Vomiting is characteristic of the disease rather than diarrhœa. Uræmic poisoning and dropsical accumulations are the chief sources of danger in the adult; while in childhood, inflammatory affections of the respiratory organs usually cut short the case. This statement, as to the comparative rarity of these latter affections in the course of nephritis in the adult, a complication which has been spoken of by several European writers as of frequent occurrence, accords perfectly with the results of hospital experience in this city. Despite these various dangers, however, the natural tendency of the disease is to recovery, especially in the more acute form; though, even in the most confirmed and seemingly hopeless cases, recovery will sometimes occur.

The changes in the urine are briefly summed up as follows: Albumen is always present, and in larger quantity than in any other form of renal disease. All the normal constituents of the urine are diminished; the water, urea, and chlorides to a greater extent than in any other disease of the kidneys. The specific gravity is rarely much below the normal standard. The colour is at first deeper, and reddish; and the urine deposits a sediment consisting of blood-corpuscles, renal epithelium, and casts of the renal tubules.

The epithelium may be fatty, natural, or pus-cells may appear in its place. The casts, in the early stage, may be either epithelial, granular, or of the small waxy form; the large hyaline casts, from straight tubules which have been deprived of their epithelium, occur only at a very late period. It will be seen subsequently that these microscopic characters are not diagnostic. We have already mentioned that the author infers from his observations that the epithelium has a much more marked tendency to become fatty in cases due to cold, than when the disease follows any other cause.

In regard to the *treatment* of tubal nephritis, after briefly stating the plans advised by the highest authorities upon renal disease, he gives that which has proved most successful in his own hands. In view of the rapid tendency to anæmia, depletion should be limited to cupping over the loins. He believes that active purgation and diaphoresis, excepting in the later

stages of the disease, to effect the removal of dropsy, are apt to be injurious, since they divert the water which is needed to wash out from the tubules the plugs of epithelium which obstruct them. On this account he advises the use of diuretics, and especially of large quantities of pure water, with or without infusion of digitalis; and under this simple treatment he has found the disease, especially in children, generally to terminate favourably. It is undoubtedly true that a free use of water and unirritating diuretics is of much service, but it must also be borne in mind that hydragogue purgatives and diaphoretics are not recommended in the early stage of nephritis, merely with the view of establishing vicarious elimination of the urinary constituents, but also of relieving that congestion and incipient inflammation with which the exuberant growth of epithelium, and all the subsequent troubles, are directly connected. After the acute stage has passed, he advises iron in combination with saline diuretics.

The treatment of cerebral symptoms in the course of renal disease must be directed towards relieving the nervous disturbance and removing the retained excreta. To effect the first of these objects, alcoholic stimulants, and opiates in small and carefully regulated doses, and the inhalation of chloroform, are advised; while at the same time, active diuretics and purgatives must be administered to promote the discharge of the accumulated effete matter.

The second division which the author makes of renal disease is the well known granular degeneration, which differs widely from tubal nephritis in the seat of the lesion, its symptoms and course, as well as in the age at which it occurs, and the causes to which it is due. The affection is analogous to cirrhosis of the liver, and is here, as is usual, described as consisting in a slow chronic inflammation, which leads to a morbid increase in the intertubular fibrous tissue, beginning at certain points upon the surface and extending inwards. This new growth, as it forms, contracts, and in so doing not only incloses and compresses such parts of the gland as are in its path, but draws in the surface at its point of origin.

In the early stage the cortex is reddened and coarse-grained, and possibly a few small cysts may be detected; the organ is harder than natural, but not much altered in size In the advanced stage the kidneys are very much reduced in size and weight; the capsule thickened, opaque, and adherent; and the surface studded with prominent light-coloured, hemispherical granulations, and often presenting several cysts of various sizes.

Microscopic examination confirms the impression that there is an obvious increase of fibrous tissue in the organ, and shows that it is accumulated around the Malpighian bodies, tubules, and bloodvessels.

The tubes are found irregularly packed with detached epithelium, or dark granular matter, though this accumulation of epithelium is far less general than in tubal nephritis; or their calibre may be occupied by transparent fibrinous casts. In many cases the epithelium has been entirely removed, and the compressed and collapsed tubes resemble threads of fibrous tissue. According to Dr. Dickinson, however, in the great majority of cases the epithelium itself remains healthy, or if at all changed, merely becomes distorted from pressure. In regard to the actual anatomical conditions found in the advanced stage of granular degeneration, all observers are agreed; but it is perhaps premature, in regard to the primary nature both of this affection of the kidneys and of cirrhosis of the liver, to entirely exclude the theory that the change consists in a destructive alteration of the epithelial cells, and that the appearance of increase of the fibrous tissue is merely due

to the condensation of that which naturally existed, caused by the emptying and collapse of the tubules. The cysts so constantly observed in the granular kidney are explained as arising either from transformation of tubules which have been completely occluded by the pressure of the contracting interstitial exudation, or from dilatation of Malpighian bodies due to the same cause.

The author refers to a series of experiments performed by him a few years ago, in which the obstruction to the circulation in granular kidneys was well demonstrated by passing water, with a fixed pressure and temperature, into the renal artery, and measuring the amount which escaped by the vein in a certain time. The result was, that a kidney affected with granular degeneration could not transmit one-fourth so much water as passed through a healthy kidney under the same circumstances.

The essential difference between this form of renal disease and tubal nephritis is equally shown by the difference in their causes. It is almost unknown before the age of twenty years. A case recorded in the books of St. George's Hospital, which ended at the age of eighteen years, is referred to as showing the earliest period at which the disease has been known to cause death. We have, however, during the past year, observed a case in which death took place from uræmia at the age of fifteen, the kidneys being found, after death, in an advanced state of granular degeneration.

The general conditions to which this affection can he traced are: 1. Conditions which produce and maintain venous congestion of the kidney—such as valvular disease of the heart, and pregnancy. 2. The gouty habit, from whatever circumstance it may arise, but more especially when associated with lead-poisoning. 3. A general tendency to fibroid degeneration, as shown by changes in the liver, lungs, and other organs, frequently occurring in chronic alcoholism.

Valvular disease of the heart is assigned as a frequent cause; thus in 153 cases of valvular disease examined by the author, the kidneys had granular surfaces and more or less contracted cortices in 67, and in 29 were hard, congested, and increased in bulk, but still smooth. From these and similar observation, it seems probable that in a fair proportion of cases the prolonged congestion due to cardiac disease induces granular degeneration of the kidneys; whilst in regard to the analogous affection of the liver, cirrhosis, this cause is not admitted by perhaps a majority of pathologists.

In the same way, by causing prolonged congestion from pressure of the uterus upon the renal veins and vena cava, pregnancy, especially if often repeated, may produce granular degeneration of the kidneys.

Gout is also a frequent cause of this form of renal disease, and when the influence shown by Garrod, of the absorption of lead upon the development of the gouty condition, is borne in mind together with the additional fact that many of those exposed to the influence of lead die with granular kidneys without having manifested any external gouty symptoms, the powerful effect of lead in producing this disease is evident. Thus Dr. Dickinson finds that of 42 men, having had to do with lead, who died from disease or accident in St. George's Hospital, 26 had distinct granular degeneration of the kidneys, in most cases having been the cause of death. Indeed the author asserts that at least one-half of painters eventually die from this form of renal disease.

In the following chapter the symptoms of granular degeneration of the kidneys are well described. The beginning of the disease is usually with-

out definite cause, and so obscure and insidious that a person who has scarcely imagined himself at all out of health may be suddenly seized with cerebral symptoms due to uræmia.

Dropsy may be absent throughout the entire course of the disease, though it often occurs and usually in the form of œdema. There is marked derangement of digestion. The left ventricle of the heart becomes hypertrophied in almost 50 per cent. of the cases, and the author adheres to the explanation suggested by Dr. Bright that the enlargement is due to an alteration of the blood, which causes it to pass with difficulty through the capillaries, and thus necessitates more powerful action of the left ventricle. Atheroma of the arteries is also frequently found, having been noticed by the author in not less than 52 per cent. of 250 cases. It is interesting to recall at this point the double relationship which both cardiac disease and atheroma hold to granular degeneration of the kidneys. We have already seen that the renal disease frequently induces both the other affections; and conversely that cardiac disease is frequently attended with granular kidneys; and we have observed more than one case in which advanced atheroma of the renal arteries appeared to have been instrumental in developing this form of renal degeneration.

Inflammatory affections are much less likely to occur during the course of this disease than in tubal nephritis. On the other hand, death frequently occurs from apoplexy due to the atheromatous condition of the cerebral vessels; thus of 75 victims of apoplexy examined in St. George's Hospital during the course of twenty years, 31 are described as presenting decided granular degeneration of the kidneys. The author very justly observes that here three elements combine to favour the occurrence of apoplexy; the atheromatous condition of the cerebral arteries; the increased force of the hypertrophied left ventricle; and the increased pressure upon the arterial wall due to the refusal of the capillaries to transmit the altered blood. Another lesion due to the atheromatous condition of the arteries is apoplexy of the retina which not rarely produces dimness of vision or total blindness in the course of this disease.

The natural tendency of the fully developed and uncomplicated disease is to produce death by uræmia, the head symptoms being rather comatose in character, than convulsive, as in tubal nephritis; convulsions may, however, occur. If the causes, progress, and essentially incurable nature of granular degeneration differ thus widely from those of the preceding disease, an equally marked distinction exists between the condition of the renal secretion in the two affections. In the early stage of granular degeneration the urine is much increased in quantity, is light-coloured, and of a rather low specific gravity; and it is only in an advanced stage that the amount is greatly reduced. The urea, uric and phosphoric acids are reduced, but not to a great extent until the urine has become scanty, and the end approaches. Albumen, in some cases—as in one recently published by Dr. Murchison—does not appear throughout the course of the disease; or, if present, is variable in quantity, and often exists in small amount only. Hematuria, to an extent appreciable by mere inspection, does not occur in more than ten per cent. of all cases. Casts of the tubules may be absent in the early stages; they can usually be found later, and are present in two forms: hyaline casts, which occur in other conditions of the kidney, and a variety of granular casts which Dr. Dickinson regards as characteristic of granular degeneration, and describes as of coarse granular texture, large, opaque, and conspicuous, and probably consisting of disinte-

grated fibrin; whereas those in tubal nephritis are composed of altered epithelium. There is very little free renal epithelium in the urinary sediment. There is no doubt that in many cases, by careful and prolonged observation of the changes in the urine, a diagnosis may be made between the various forms of chronic renal disease; but we apprehend that the experience of most microscopists will confirm the statement, that the characters of the casts found in the urine do not constitute a reliable guide save in rare instances.

The incurable nature of granular degeneration of the kidneys is fully admitted by the author. He recommends that the *treatment* should be directed to securing a suitable climate for residence—to promoting the activity of the skin by the use of the hot-air or Turkish bath, and to the administration of some preparation of iron, preferably one of the diuretic salts, as the acetate. The food should be as non-nitrogenous as is consistent with the proper nutrition of the patient, in order to avoid any tendency to the accumulation of urea. Alcohol, in moderation, is not productive of any harm. If dropsy occur, diuretics, among which decoction of scoparium is recommended as most effective; purgatives and diaphoretics must be employed. In the treatment of the cerebral symptoms which so frequently supervene, attention is called to the fact that there is less tendency to anæmia in this affection than in other forms of renal disease, and accordingly vigorous purgation, or even free abstraction of blood, are recommended—though this latter measure is to be used only in few cases.

In the succeeding chapter the author begins the discussion of the third division of his subject—that form of renal disease depending upon the deposit of a peculiar material which has at different times received the names of waxy, lardaceous, amyloid, or albuminoid matter. As this is the portion of the work we are considering which has most claim to originality, and as the author takes up the discussion at a point only reached by the recent investigations of several observers, it may not be amiss to supplement our synopsis of his views by a brief sketch of the previous position of the question.

The first recognition of the so-called amyloid disease does not date further back than 1832, when Hodgkin, and a little later, Bright and Carswell described it—regarding it, however, as a form of malignant disease. Subsequently Rokitansky asserted that it was a species of fatty degeneration. And more recently—indeed until within the last ten years—it was considered, as by Budd, Bennett, and Gairdner, as an albuminoid degeneration. About this time, however, the theory was advanced by Virchow, that the morbid material deposited in these cases is starch-like in nature; and consequently he bestowed upon the disease the term amyloid degeneration. The peculiarity of this deposit, according to him, is that it never becomes blue under the action of iodine alone, but assumes a peculiar yellowish-red—which however, it is true, has in many cases a tinge of reddish-violet. "On the other hand, it displays pretty regularly either a real perfectly blue, or violet colour, when the application of iodine is followed by the very cautious addition of sulphuric acid." Thus he considered this substance less nearly allied to starch, properly so called, and more akin to cellulose, though it is also distinguished from the latter by the fact of its becoming coloured upon the application of iodine alone.[1]

[1] Cellular Pathology, Chance's Trans., p. 414.

Finally, in opposition to these views of Virchow, the theory was advanced by Meckel, that this form of disease is due to the deposition of a peculiar fat, more or less nearly identical with cholesterine, and hence he suggested that the morbid condition should be called the cholesterine disease. This last view, it will be noticed, approaches the one formerly held by Rokitansky and others. In this position, then, the question remained, the opposing theories being maintained by their separate proposers and a few adherents; but a large majority accepting, from the large weight of Virchow's authority, and the positive nature of his observations, the view that the morbid deposit is an amyloid material. Quite recently, however, the whole subject has been very carefully re-examined, especially by Pavy[1] and Dickinson,[2] from whose memoirs much of the present description is derived. In the first place, it has been determined by elementary analysis by Schmidt, Friedréich and Kekule, Pavy and Odling, that the so-called amyloid substance is, in reality, as highly nitrogenized as albumen itself. Still further, it has been a matter of frequent experience with numerous observers, that in cases where the organs were undoubtedly the seat of this peculiar deposit, iodine and sulphuric acid would not produce the peculiar colour changes described by Virchow.[3]

On the other hand, as stated by Dr. Pavy, on applying to the cut surface of a so-called amyloid organ, a strong solution of iodine, the parts pervaded by the deposit gradually assume a dark-brown colour, whilst the healthy tissue remains only slightly tinged by the reagent. The addition of sulphuric acid, instead of developing a blue colour, produces blackening of the tissues, from a precipitation of iodine from the iodide of potassium used in the solution. Once more, Dr. Pavy has ascertained by experiment that if either tallow, lard, or stearine are treated with iodine and subsequently with sulphuric acid, a beautiful colour, varying between violet blue and purple will be developed. Cholesterine is not affected by iodine alone, but the subsequent addition of the acid brings out a deep blue tint. It is therefore possible that the presence of fatty matter may in some amyloid organs have given rise to a blue colour; but the really characteristic reaction with iodine, as mentioned above, is preserved after all the fat has been extracted from the affected organ.

It appears, consequently, that not only were Virchow's observations, as to the production of the starch reaction, and his inferences therefrom, fallacious, but that elementary analysis proves that nitrogen is present in large amount in the so-called amyloid material. It is evident then that this peculiar deposit can be neither amyloid nor fatty in character, but that it is, in all probability, either albuminoid or fibrinous.

[1] F. W. Pavy, M. D., on so-called Amyloid Degeneration, Guy's Hosp. Rep., 1864, p. 315.

[2] W. H. Dickinson, M. D., Med.-Chir. Trans., vol. L., 1867, p. 39.

[3] We have frequently observed this during the past few years, and, while writing this review, have had the opportunity of carefully testing the organs in two cases of very extensive and advanced albuminoid degeneration, and found that iodine and sulphuric acid gave no amyloid reaction, though iodine alone developed in great perfection the peculiar effect above noticed. Indeed, the only recent observer we are familiar with who upholds Virchow's statement is Hayem (*Comp. Rend. de la Soc. de Biol.; Syd. Soc. Biennial Retros.*, 1865–6, p. 176), who, in speaking of "amyloid degeneration of the alimentary canal," says that "on treating the patches with water containing iodine, the whitish lines immediately assume a brownish-red colour, which is changed to a bluish-violet on the addition of a little sulphuric acid."

In the paper already referred to, Dr. Dickinson has carried the inquiry one step further, and appears to have determined the actual character of the substance to be a form of fibrine which has been deprived of its alkali. The following conclusions show in a concise form the various steps of the argument:—

1. The morbid deposit loses its characteristic reactions when it has been allowed to absorb potassa or soda, although the affected tissue may be dried, boiled, soaked in alcohol, in strong acids, or in caustic ammonia, and still retain it.

2. Organs containing this deposit yield on analysis a smaller proportion of the alkalies than do the same organs in a state of health. This reduction is so great in well-marked cases, that the affected structure has a decidedly acid reaction.

3. Ordinary fibrin or albumen can be made to exhibit all the peculiarities of so-called amyloid tissue by depriving them of alkali by artificial means.

As an additional test for this morbid deposit, no less striking than iodine itself, Dr. Dickinson recommends sulphate of indigo. If healthy tissue be soaked in a weak solution of this, it assumes a blue colour, which after a time fades into a pale greenish-blue. Portions of organs affected with this disease, however, retain a deep brilliant blue colour. "The power of decolorizing sulphate of indigo is known to belong to the caustic alkalies; and under the circumstances described the destruction of colour appears to be due to free alkali contained in the healthy tissue; while the colour is retained in the morbid deposit, owing to the absence of this component." It has long been observed that the tendency to this form of disease appears in various cachectic states of the system, especially in chronic tuberculosis, syphilis, and chronic bone disease. Nearly all such cases are attended with more or less profuse suppuration; and indeed of 109 cases of so-called amyloid disease in which the antecedent history could be traced, Dr. Dickinson found that in 83, or more than three-quarters, there had been undoubted suppuration, while in the remaining 26 the preceding disorders were of such a nature as to make it probable that in the greater number there had been at some period a discharge of pus. Regarding then the so-called amyloid deposit as dealkalized fibrin, and analysis having shown that pus is an albuminous fluid containing a large amount of potassa and soda, he views the morbid deposit as of the nature of a residuum, occurring in cases where the system has been drained by an alkaline albuminous discharge, and the blood consequently contains an excess of fibrin with a deficiency of alkali. He also discards the various names under which this disease has been known, and suggests the term "Depurative," as significant of the process which is its most frequent cause. He argues that "under this designation the false conceptions would be avoided which attach to the phrases by which the process has been hitherto described, and a clear assertion would be made of the great practical truth that in all cases of protracted suppuration the deposit in question is a probable contingency." He himself adds in a foot-note that "it has been objected to this word, that depurate is already in use in the sense of purify. This, however, appears to be of small consequence, since no confusion is likely to result. The fault rests with those who originally permitted the identity of root between the words pūs and purus."

It is not, however, quite clear to us that either the reason given in the text, or the scrap of philology in the foot-note, justify the new christening to which he has subjected the disease in question. It is evident that

the term "amyloid" can no longer be defended on any ground, and that the names "waxy" and "lardaceous" are chemically inaccurate, though applicable to the physical appearances of the diseased organs. But is seems to us that the term "albuminoid deposit," though doubtless not perfectly expressive, sufficiently well describes the lesion to justify its retention in use. It is to be remembered that there is no actual proof, as yet, that the morbid deposit is fibrinous rather than albuminoid, since either albumen or fibrin will answer the chemical requirements of the case; nor, although the suggestion is an ingenious one, and certainly well borne out by the clinical history of the disease and the composition of pus, can it be considered as established that the prolonged discharge of pus is the essential cause of the morbid deposit. The author himself suggests that it may eventually be shown that there are diseases which act upon the blood so as to produce the effect of a purulent discharge, and thus occasion the deposit without the medium of suppuration. We cannot, therefore, even on clinical ground, regard the term "depurative" as desirable; and in regard to the philological objection to the word, it may be added that not only is "depurate," as derived from *de* and *puratus*, or *purus*, in common use, but that various forms of the verb, and adjectives and substantives formed from it, are to be met with in innumerable places, both in medical and general literature, as far back at least as Raleigh or Sydenham.

Surely the "*jus et norma loquendi*" may be pleaded by any who prefer adhering to the custom of those who originally admitted this time-honoured word in its proper sense.

Before leaving the general discussion of this subject, we may add that, from the statistics which the author has collected, syphilis does not seem to produce this form of disease, except by causing bone disease or extensive ulceration.

The kidneys are very favourite seats for the so-called "amyloid deposit," and when not attacked first, usually become involved so early in the course of the disease, that the change in their secretion is one of the first symptoms noticed.

When the kidney presents an advanced stage of this alteration, the organ is increased in size and heavy, weighing from 10 to 16 ounces; the cortex is firm, pale, and increased in thickness, and, when no fatty tendency coexists, often has a pinkish or gray translucency. The capsule is adherent, and often thickened. The external surface is smooth and pale, though dotted with stellate vessels or irregular red patches. According to Dr. Dickinson, the morbid material tends to contract, and in a very advanced stage the surface may become uneven, presenting large, smooth elevations, or irregularly deformed in some places.

There is not, however, seen as a consequence of this form of disease the regular covering of uniform small granulations, characteristic of granular degeneration. Cysts are often found, as in the other form of intertubular disease, and are here due, likewise, to the contraction of the morbid deposit, constricting the tubules and leading to a cystic dilatation of their upper portion or of the capsule of the Malpighian tuft. In all stages, iodine furnishes the characteristic reaction; early in the disease merely dotting the Malpighian bodies, while later, brown lines become visible in the cones, and finally almost the whole surface of the section gives the characteristic colour. Here as elsewhere the change first affects the minute arteries, then leads to an intertubular effusion and finally induces changes in the tubules which cause them to become plugged up. The vessels of the Malpighian

tuft are first affected, and subsequently the straight vessels between the tubes. The material poured out between the tubules has at first a closely nucleated structure, like that presented by new fibrous tissue or some varieties of fibro-nucleated growths. The same material also escapes from the exposed vessels of the Malpighian tufts and appears in the tubes and in the urine in the form of casts, which occasionally present the characteristic reaction with iodine. The tubes themselves remain rigidly open, and the epithelium holds to the wall with unnatural firmness, as though the wall were thickened, and the cells partially fused upon it. The epithelium is rarely much altered, though occasionally the cells are fatty or distorted in shape. Hence kidneys in this state of disease furnish the most typical demonstrations of the renal tubules. The tubes often contain fibrinous plugs, or, as already stated, are transformed into cysts.

In explaining the mechanism of the disease, the author apparently regards it as a purely mechanical process. He states that the dealkalized fibrin is deposited in the smallest arteries, where the force of the circulation is diminished and the blood current retarded. This process, though it thickens the walls, renders them more permeable and hence the liquor sanguinis, holding in solution albumen and the modified fibrin, freely exudes into the tissues. There appear to us, however, some difficulties in accepting this purely physico-chemical explanation of the disease, and it may be doubted whether its essential nature does not rather consist in a morbid alteration of the cells, first of the middle coat of the minute arteries, and afterwards, as in granular degeneration, of the intertubular tissue.

A clear and concise clinical history of the disease follows, illustrated by numerous well recorded and very typical cases. The affection is most frequent between the ages of 20 and 30 years; its period of greatest mortality being later than that of tubal nephritis, but earlier than that of granular degeneration. Dropsy, both in the form of œdema and ascites, is usually present, but the pleura and pericardium generally escape. There is a marked tendency to inflammatory complications, especially pneumonia and pleurisy; but, on the other hand, cerebral symptoms are rarely developed, occurring but six times in a series of forty-eight cases, in which the renal disease was marked. Vomiting and diarrhœa are of very common occurrence, often depending upon albuminoid degeneration of the alimentary canal. Indeed diarrhœa, together with the inflammatory complications before alluded to, constitute the chief causes of death. There appears to be no tendency to atheroma of the vessels, to hypertrophy of the heart, to extravasation of blood in the brain, or to affection of the retina.[1]

The disease is essentially chronic, though it not unfrequently remains latent until a few weeks or months before death. One case however is narrated in which the patient, a vigorous young man, died of pyæmia on the twenty-first day after amputation of the thigh, and at the autopsy the kidneys were found the seat of positive albuminoid disease.

The condition of the urine resembles, in many particulars, that in granular degeneration. The quantity is much increased at first, but subsequently diminishes, comparatively rarely, however, falling below twenty fluidounces. The increase in quantity persists even when œdema is present, and the

[1] Dr. Grainger Stewart, in the *Med.-Chir. Rev.* of January, 1868, p. 201, quotes a series of cases of albuminoid degeneration in which hemorrhage was observed in the spleen, in the skin, in mucous and serous membranes, in the substance of muscles, in the mucous membrane of the intestines, and perhaps in the kidney also.

coexistence of these two conditions is regarded by the author as characteristic of this form of renal disease. Blood is rarely present, but albumen appears early, and gradually increases until it is sufficient to form a bulky coagulum. The sp. gr. is reduced to from 1015 to 1006, or even lower; the acidity is diminished, and all the other elements are reduced in amount. The urea, however, is not lessened to the same extent as in the other forms of renal disease. Casts appear at an early period, and are usually present in abundance throughout the course of the disease. They are of the fibrinous and epithelial forms, and present nothing peculiar, save in the rare cases, when they yield the characteristic reaction with iodine. The diagnosis then chiefly rests upon the antecedent history of the case, the coexistence of dropsy and increased secretion of urine, the fact that the kidneys rarely remain the only organs affected, but that the liver and spleen ultimately enlarge, the frequency of diarrhœa and the rarity of cerebral symptoms.

In regard to the *treatment*, the author recommends that, when possible, the cause should be removed; but that if it be impossible to check the drain upon the system, attempts to counterbalance its effects should be made by administering an animal and albuminous diet, conjoined with the internal use of alkalies. In addition to this, special symptoms must be palliated, the dropsy and diarrhœa combated by suitable means, and iron and cod-liver oil given to remove the anæmic and cachectic state the patients are usually in. If there be a syphilitic taint, iodide of potassium or iodide of iron may be conjoined. It is evident that this new view of the origin of this form of renal disease, if substantiated, would have a most important bearing upon surgical operations. It has long been generally understood that the existence of renal disease, as manifested by the presence of albumen and tube-casts in the urine, constitutes a most grave contraindication to the performance of any serious operation. In regard to lithotomy, this is, indeed, specially true, since in such cases albuminuria but too frequently indicates a suppurative form of nephritis, with actual destruction of the tissue of the kidneys. The existence, however, of granular degeneration or of chronic tubal nephritis would also be regarded as a most unfavourable complication. But if it be ultimately shown conclusively that the albuminoid degeneration depends essentially upon purulent discharge, this form of renal disease will have a very different significance. It cannot, indeed, be hoped that those portions of tissue which are permeated by the new deposit, can ever be fully restored to health, but it is quite possible that, if the cause be removed, the disease will not progress further. Although therefore its presence would, of course, be unfavourable to the success of the operation, it would, to a certain extent, encourage its performance. And further, as Dr. Dickinson argues, if in any case of chronic bone disease, a careful examination of the urine reveals that the kidneys are undergoing this change, it would be prudent to avoid any of those conservative operations which necessitate a long and exhausting proprocess of repair, and to resort rather to amputation.

In Chapter XIV. is presented a clear and concise comparative view of the three forms of renal disease discussed in this volume, illustrating statistically and by diagrams the differences which exist between them, both in causes, symptoms, complications, and modes of termination.

The state of the blood in albuminuria is treated of briefly in the following chapter, and a few of the most authoritative analyses of the blood in

this disease are quoted, as evincing the general law that in albuminuria, the albumen and corpuscles of the blood are diminished, while the water, fibrin, salts, creatine, creatinine, and extractive matters are increased. Urea and uric acid are superadded. These statements hold good in all forms of albuminuria. Undoubtedly much remains to be learned, especially as to the varied degree of these alterations in the different forms of renal disease. As yet, one of the most interesting generalizations which can be made from the facts already known is, that "the general condition expressed by the word uræmia, must be held to imply nothing more specific than that the blood is altered by the presence of materials which, in their own shape, or under another guise, ought to have passed out by the kidneys."

It is customary to refer a large share in the production of renal disease to the excessive use of alcohol, but Dr. Dickinson has been led, from a careful investigation of the subject, to doubt the propriety of this. He presents some interesting statistics in regard to this question, which have been obtained by an examination of the kidneys of patients dying with delirium tremens, and from the records already published of the post-mortem appearances of the bodies of persons who had been notorious drunkards, and who met a sudden death by accident or suicide; and it appears from these that so far from intemperance being a very frequent cause of renal disease, the kidneys participate but slightly, compared to the liver, in the injurious effects of an excessive use of alcohol. Granular degeneration, indeed, appears, from the author's table, to be absolutely less frequent after delirium tremens than when death has resulted independently of alcoholic poisoning. Alcohol, it is true, frequently causes an increase of oil in the renal epithelium, and in some cases gives rise to changes in the tubular structure which indicate an inflammatory or catarrhal condition. These statements are corroborated by the reports of the Registrar-General, which have enabled the author to compare the number of deaths due to alcohol and renal disease respectively, in various parts of Great Britain. It appears from this comparison that renal disease is absolutely more common in the sober agricultural districts than in large towns. We are, however, prevented by want of space from commenting on these conclusions, which are certainly not in accordance with our preconceived views.

We have already referred to the great climatic law, that renal disease is most frequent neither in arctic nor tropical climates, but in those parts of the temperate zone where the most marked and sudden variations in temperature occur. In such places the functional activity of the kidneys is very great, and owing to the intimate relation subsisting between them and the skin, the rapid changes in the circulation of the surface induce frequent attacks of renal congestion, which but too often pass into a condition of fully-developed and intractable inflammation. Dr. Dickinson has illustrated this in an interesting manner by statistics drawn from the Registrar-General's Reports, and from the Army Medical Reports. Want of space, however, forbids us to quote any of the details, from which it appears that not only does this general law hold good in regard to countries widely separated from each other, but that its working may be traced with equal certainty within the limits of so small a country, geographically considered, as Great Britain. This is well shown, for instance, by comparing the east coast with the west. On this latter coast, where there is scarcely heat enough in summer to ripen wheat, but where the winters are warm from the influence of the Gulf stream, so that a very

uniform temperature prevails throughout the year, renal disease is not one-half so frequent as on the eastern side of the kingdom, where the weather is both colder and hotter than on the Atlantic shore, and undergoes much larger and more frequent variations. It does not, however, appear that there is any direct connection between the humidity of the air and the frequency of renal disease. It is, of course, evident that the influence of these atmospheric conditions, does not affect the so-called amyloid degeneration of the kidneys, which is scarcely a primary disease, but owes its origin to various constitutional causes. The practical inference to be drawn from these facts is obvious, and the advice given by the author is to be highly commended. He urges that in granular degeneration, which appears to have a close dependence upon atmospheric influences, and where the structure of the organ is invaded by slow and often hesitating approaches, a warm and constant climate should be sought, "where the genius of the place is opposed to the progress of the complaint."

In concluding this notice we must again repeat our sense of the value of the work we have been discussing. Without pretending to produce an exhaustive treatise, the author has combined a clear and fair summary of the facts generally received in regard to renal disease, with a full and valuable clinical description of its various forms. In addition to this, he has given the most complete account of the so-called amyloid degeneration as affecting the kidneys, and has made out a strong case in favour of the theory he advances to explain its nature and origin. It is impossible, however, to reproduce here the features which give to the work much of its value—the full statistical tables, the numerous well-reported cases, and particularly the admirable illustrations both of the gross and microscopical appearances in the various forms of renal disease. These are executed in a high style of chromo-lithographic art, and combine all that can be desired in medical illustrations.

The book is handsomely printed, and the text, though exhibiting occasionally peculiarities of phraseology and style, is unusually free from inaccuracies. W. P.

ANALYTICAL AND BIBLIOGRAPHICAL NOTICES.

ART. XVII.—*Pennsylvania Hospital Reports.* Edited by J. M. DACOSTA, M.D., and WILLIAM HUNT, M. D. Vol. I. 8vo. pp. 420. Philadelphia: Lindsay & Blakiston, 1868.

"PENNSYLVANIA HOSPITAL REPORTS!!—at last! and that only upon attaining to the ripe age of one hundred and twelve years!"

Such is the opening paragraph of the first article in this volume, entitled *The Pennsylvania Hospital, and Reminiscences of the Physicians and Surgeons who have served it*, from the pen of one who speaks by the card, Charles D. Meigs, M. D., formerly one of the Physicians to the Lying-in Department of the Hospital, Emeritus-Professor of Midwifery in the Jefferson Medical College, an author of world-wide celebrity, a man whose name is a household word with the American medical profession, a facetious writer, and one of the most humane, kind-hearted, and excellent physicians and obstetricians of the age. "Clarum et venerabile nomen gentibus, et multum nostræ quod proderat urbi." Of the many papers in this book, there is none more likely to be read with a deeper interest than this, so characteristic of its distinguished author. We doubt if there be anything in Cooper, Irving, Scott, or Dickens, more entertaining than this article. It possesses all the charms of a romance. The author writes with the pen of a master, so honestly, so graphically, and so forcibly, as to make one feel the truth of everything he utters. His delineations of the physicians and surgeons who have served the Pennsylvania Hospital are life-like portraits; in fact, every scene which he describes juts out in bold and prominent relief. "Its corner-stone was laid by the honourable hands of Franklin, with prayers and blessings." The year was 1755. The tallow-chandler's son, the printer, the lightning robber, the ambassador, the philosopher, crowned by kings, laid the corner-stone! charitable hands reared the superstructure! great physicians and surgeons, endowed with the power of healing, cared for its inmates! William Penn—he of the woods—furnished the name! Kuhn and Rush, Wistar, Physick, James, Dorsey, Barton, Hewson, Parrish, Hartshorne, and Pepper are honoured names in medicine, whose mantle has fallen worthily upon their descendants of the present medical and surgical staff of this noble institution, whose contributions make up so large a portion of the volume before us.

The name of Rush, says our venerable author, was a sort of myth in my young ears. "When, in the autumn of 1812, I first entered his lecture-room, in the old University building, on Ninth Street, I was enrapt: his voice, sweeter than any flute, fell on my ears like droppings from a sanctuary, and the spectacle of his beautiful radiant countenance, with his earnest, most sincere, most persuasive accents, sunk so deep into my heart that neither time nor change could eradicate them from where they are at this hour freshly remembered. Oh! but he was a most charming gentleman! a 'grave and reverend, and potent signor' in the scholar class of mankind!"

Physick, like his master John Hunter, was a model of exactness and certainty. "I never saw a man who knew so thoroughly well all that he knew. It seemed as if his science and art were ledgered in his brain, so that he could turn on the instant to page and line. Dr. Physick's service in the house was continued during more than twenty-two years, from 1794 to 1816, when he resigned his office. His manners were to the last degree dignified and elegant, and as he still wore his hair powdered and clubbed, he bore about him a sort of traditional look, which added to the respect which everywhere, in public and private, greeted him, always reverently. In the midst of a crowd of students more than

five hundred in number assembled from all quarters of the compass, impetuous, ingenuous hot heads from the Carolinas, restless Georgians, bold sons of Kentucky, and buckeyes from the northwest, or the graver students from the north, the moment the Professor entered the lecture-room, all was hush, with a general pleased expression murmured all over the amphitheatre, 'and ear and eye attentive bent' to the mellifluous tones of his voice, or the most admirable illustrations of surgical processes that he so profusely supplied. He was a man like a statue of marble but animated by a promethean light and warmth."

Dorsey, the nephew of Physick, was a great favourite with his pupils, and a man of uncommon personal popularity. He wrote the first work on surgery ever published in this country, a work for the materials of which he was largely indebted to Boyer, Desault, Pott, Benjamin Bell, and other writers of the latter part of the last and the early part of the present century. Dr. Meigs's love and respect for this work show the deep and abiding effects which are sometimes made upon a great man's mind by early impressions. "We early received Dorsey's Surgery as a man takes his wife, for better, for worse, in sickness and in health, until death doth us part; and though our golden wedding is already past and gone, we adhere to our engagement then and there."

Dr. Thomas T. Hewson, with whom Dr. Meigs enjoyed a long and friendly acquaintance, was "one of the good furtherers of our house's name and fame." Dr. Joseph Hartshorne was a "bold, highly instructed, and most dexterous surgeon." Joseph Parrish was "a model man from the society of Friends." Dr. J. Rhea Barton was for upwards of thirteen years "the ornament and pride of the surgical department of the Hospital;" and Dr. William Pepper, "a man born for the place," a name that cannot be mentioned without praise, was "extensively known as the admirable clinical lecturer at the Hospital for near twenty consecutive years, and subsequently as Professor of the Practice of Medicine in the University of Pennsylvania."

Before we enter upon an analysis of the contents of this volume, it is proper we should correct an error into which the editors have inadvertently fallen in their statement that this is the only hospital in this country that has sent forth, under its own seal, the experiences gained within its walls. This was not so by nearly half a century. "Pereant illi qui ante nos nostra dixerunt." The first publication of the kind in the United States appeared in 1818, under the title of "*The Medical and Surgical Register: consisting chiefly of Cases in the New York Hospital.*" It was edited by Drs. John Watts, junior, Valentine Mott, and Alexander H. Stevens. Only two parts were issued, when the work was suspended. A large share of the volumes was taken up with the recital of Dr. Mott's surgical exploits, among which the famous one of the ligation of the innominate artery occupied a conspicuous place. The Dublin Hospital Reports and Communications, of which only five volumes were ever issued, made their appearance in the same year. St. Thomas's Hospital Reports were commenced in 1835, and were soon followed by Guy's Hospital Reports, both of which are among the most valuable contributions to medical and surgical science of the age. The London Hospital, St. Bartholomew's Hospital, and St. George's Hospital have recently imitated the example of their elder sisters, and we are glad to learn that the physicians and surgeons of the Bellevue Hospital of New York will soon follow in the wake of the Pennsylvania Hospital.

The volume before us contains twenty-three papers, illustrated by two lithographs, and twenty-seven wood-cuts, of the contents of each of which excepting the first, which has already been sufficiently noticed, we furnish a condensed analysis.

II. *Laceration of the Female Perineum: Its History and Treatment.*—Dr. D. HAYES AGNEW, in this paper, which is illustrated by fourteen wood-cuts, after giving a brief description of the anatomy of the parts, considers the causation, degrees, results, nature of the deformity, prevention, and history of the cure of lacerated perineum; points out the proper time for operation, along with its indications and contraindications; gives judicious advice as to the preparation of the patient; and, finally, describes an operation to which he has appended his name. This having been eminently successful in practice, and being as

simple as it is efficient, we shall confine our analysis to the main points insisted upon by its deviser.

The bowels should be emptied thirty-six hours before the operation by a mild cathartic, after which a grain of opium is to be administered to render them quiet. The parts having been divested of hair, and the patient placed in the lithotomy position, the surgeon, seated in front of the perineum, seizes with the forceps one side of the laceration, and commences its denudation from behind forward. The paring should not extend deeply, and, when completed, should be one inch broad, and include a little of the labium and the vaginal mucous membrane. The opposite side is treated in the same manner, when the recto-vaginal septum is rendered tense, and its surface freshened to the extent of three-quarters of an inch. The bleeding having been controlled, the incisions are next to be approximated by deep and superficial silver sutures, commencing with the former, the first being introduced behind, or next to the rectum. Three or four of these will usually suffice, care being taken to insert them one inch exterior to the denuded border, and carry them so deeply as to have them include a little of the mucous membrane of the vagina. The superficial stitches, placed intermediate to the others, are inserted three-eighths of an inch from the edges of the wounds, and penetrate the skin and a little into the cellular tissue. The deep sutures are secured by shot clamped upon them, while the superficial ones are twisted in the usual way. To give additional support, a strip of adhesive plaster, two inches and a half broad and twelve or fourteen inches long, is placed across the nates, and the woman put to bed, with the knees bound together by a roller, a napkin being interposed to prevent excoriation. When the recto-vaginal septum is torn to any considerable extent, its borders should be freshened, and approximated by silver sutures, previous to the restoration of the perineum.

In reference to the after-treatment, it is advised that the diet be bland, that the bowels be kept at rest by small doses of opium, and that the urine be drawn off every five or six hours. The deep stitches are to be removed, in the reverse order of their insertion, at the expiration of seventy-two hours, the one next to the rectum, however, being permitted to remain another day, if it retains its hold firmly. The superficial sutures are to be withdrawn on the seventh day. On the third day, a tepid solution of the permanganate of potassa should be thrown upon the parts by means of a syringe, and this should be repeated daily. The bowels may be opened gently on the twelfth day, when they should again be locked up for one week, to permit the more secure consolidation of the parts. If everything has progressed favourably, the patient may be allowed to sit up after the sixteenth day.

The operation of Dr. Agnew has been practised in ten instances, all of which were perfect successes. It differs from the procedure of Mr. Baker Brown, of London, in that the sphincter ani muscle is not divided, and the quilled suture is replaced by the interrupted silver suture.

III. *On the Morphological Changes of the Blood in Malarial Fever, with Remarks upon Treatment.* By J. Forsyth Meigs, M. D., assisted by Edward Rhoads, M. D., and William Pepper, M. D.—This elaborate paper is based upon one hundred and seventy-six cases of malarial fever, either of the intermittent or the remittent type, in one hundred and fifteen of which the blood was examined microscopically during life, with the view of determining the diagnostic value of certain alterations of its elements, as indicated especially by the presence of pigment material, which is rapidly and largely produced during the progress of miasmatic fevers. The appearances presented by post-mortem examinations of six fatal cases, all that occurred, are minutely portrayed; and, in addition to some highly interesting remarks on the connection of this pigment matter with intermittent and malarial affections, along with some considerations on the physical characters of malarial pigment, which do not differ materially from those advanced by Professor Frerichs, the details of a number of cases are given, which are to a certain extent typical of the different forms of malarial disease, and at the same time illustrate some important points in treatment.

Dr. Meigs is convinced that the diagnosis of malarial fevers, except in the most aggravated cases, cannot rest upon an examination of blood from the peri-

pheral vessels, as, for example, those of the finger, since "in only two patients was the blood obtained during life seen to contain not only grains and granules, but pigment cells also." Notes were, however, made of the appearances of the red and white corpuscles; and, from a comparison of one hundred and fifteen microscopical examinations with post-mortem appearances, the author deems himself justified in the following conclusions:—

"1. That in examining blood during life with a view to determine the presence or absence of pigment matter, great care is necessary to exclude all foreign particles from the epiderm or elsewhere.

"2. That pigment may exist abundantly in the visceral capillaries, and in the contents of the portal vein and other large vessels, when blood obtained from the derm and subcutaneous tissue does not exhibit it.

"3. That only in cases of excessive pigment development will granules and pigment cells be visible in such blood.

"4. That in the acute stages of malarial fever, the red blood corpuscles are darker than natural, appear soft, are sometimes crenated, readily yield their colouring material when mingled with water, and are disposed to mass irregularly rather than to form distinct rouleaux.

"5. That as the disease progresses they are rapidly and very greatly diminished in number, become pale, lose their tendency to aggregation, and either remain isolated or arrange themselves in imperfect columns.

"6. That in the early stage of the disease, the number of the white corpuscles is not perceptibly increased, and that later their increase, though very irregular, is always observable; from six to thirty-five appearing in the same microscopic field which presents in normal blood only two or three.

"7. That excessive anæmia, with a large increase in the number of white corpuscles, may exist in malarial cases without marked enlargement of the spleen.

"8. That no other morphological alterations are to be detected except, as also in some cases of severe anæmia from other causes, certain colourless, highly refracting granules, free or in membranous-looking fragments, appearing like white corpuscles broken up, and giving to portions of the field a filmy, clouded aspect."

The author calls attention to the occurrence of an herpetic eruption about the mouth and nose, which he considers of decided diagnostic value as a sign of malarial disease. It was present in 73 per cent. of the cases, and was nothing more than ordinary herpes, in the vesicular form, seated usually in the upper or lower lip, or about the alæ nasi. Being extremely rare in typhoid fever, its presence may afford material assistance in the discrimination of malarial fever from the former affection. It occurs sometimes in the typho-malarial of our late war, and it is also often seen in epidemic cerebro-spinal meningitis; but it is more liable to appear in this latter disease upon the forehead and cheeks than about the mouth and nose.

The treatment pursued was of a very simple kind; rest, a sustaining regimen, with stimulants whenever debility was marked, and the use of quinine from the very first day, being the three grand points which are particularly insisted upon. Absolute rest in bed was enforced in all severe cases, in all which failed to yield readily to quinine, and in all cachectic conditions. The patients were not allowed to rise so long as the fever presented the remittent type, nor during the paroxysms of intermittent fever.

The regimen was that generally adopted in typhoid states, and consisted of liquid food, as milk, beef or chicken tea, and sometimes bread. In ordinary cases three ounces of milk punch were given every six or eight hours, and beef tea with bread at dinner, and bread and milk morning and evening. In severe remittent forms, when there was marked debility, the beef tea and milk punch were administered from six to twelve times in the twenty-four hours.

A solution of four grains of quinia was given every hour, or every two hours, until sixteen or twenty grains had been taken, and these doses were continued until the fever was broken up, or the paroxysms arrested, when one or two doses were administered daily. When the bitter taste caused emesis, the remedy was given in pill form. In two cases the irritability of the stomach was so great

that it was used by the hypodermic method, and in one of these large abscesses and sloughs were produced.

As soon as the periodic element was thoroughly subdued, five grains of the ammonio-citrate of iron, dissolved in half an ounce of a mixture of fluid extract of gentian, lavender compound, and water, were administered every eight hours, until the strength of the patient was well restored.

Venesection was not resorted to; but, in a few cases, from four to six ounces of blood were taken from the back of the neck.

Drastic cathartics were not allowed, the bowels, when decidedly torpid, having been opened by a mild purge.

In concluding this portion of his paper, Dr. Meigs calls particular attention to the non-mercurial plan of treatment adopted. In all the cases not more than twenty blue pills were used, and then only when the skin was very sallow, and the bowels obstinately constipated. The following extract expresses his views on this point, and will be read with interest by the physicians of this country:—

"I believe that the old American system of giving calomel and jalap, or calomel, in ten or twenty grain doses, as a cathartic, or in one or two grain doses, every two or three hours, as a cholagogue or alterative, is positively dangerous from the debility which they cause, and from the gastric and intestinal irritation which they sometimes set up. To say the least, they are unnecessary, and any one who has seen the gastric distress, intestinal irritation, or the constitutional poisoning which mercury not unfrequently induces, will be glad to know that he may, with a good conscience, dispense with its use in so severe and dangerous a disease as this of malarial fever often is. To know that 176 cases of malarial disease, many of them very severe in their type, were treated almost without mercury, with only six deaths, is surely proof enough that this drug is not essential. And when it is recollected that of the six deaths, one occurred in an hour and a half, and another in twenty hours after admission, one of dysentery after recovery from the fever, and of one of acute tuberculosis, leaving only two deaths in 172 cases fairly ascribable to the malarial disease after proper treatment, it must be plain that mercury, except in very small doses, may be safely dispensed with."

IV. *On Acupressure.*—Dr. Addinell Hewson, the author of this paper, is, if we are not greatly mistaken, the only one of the Surgeons to the Pennsylvania Hospital who reposes much faith in acupressure as a hæmostatic agent, of which he is an able defender and an earnest advocate. He has employed it exclusively for the past three years in a great variety of cases, and is satisfied that it possesses the advantages, over the ligature, of reducing the risks to the lives of patients and the time required for their recovery. He says:—

"Acupressure, as a substitute for the ligature in arresting surgical hemorrhage, originally proposed by Professor James Y. Simpson, in 1859, is steadily gaining advocates, and will, I believe, be eventually preferred by those who may give it a thorough trial. I have now had opportunities of testing it on all the large vessels of the extremities, and with me its employment has always been pre-eminently satisfactory. In parts where the ligature has often proved so unsatisfactory as to make some more effectual means of permanently closing the bleeding orifice a great desideratum, as in the axillary artery, palmar, or plantar branches, or in other parts where the vessels give off branches close above the point at which it is desirable to effect the obliteration of the calibre, this method has been found by me all that could be wished for."

Dr. Hewson furnishes some data in reference to the pathological mechanism by which arteries are closed when acupressure is used, which refute the theory that the security in this method is merely from the pressure of an internal coagulum. From the specimens, illustrated by three wood-cuts, it would appear that the pins excite increased formative action and an active process of thickening and adhesion of the coats of the vessels, through which their calibre is permanently sealed up.

V. *Statistical Account of the Cases of Amputation performed at the Pennsylvania Hospital from January* 1, 1850, *to January* 1, 1860, *with a General Summary of the Mortality following this Operation in that Institution for Thirty Years.* By George W. Norris, M. D.—In the 22d, 26th, and 28th vol-

umes of this Journal, Dr. Norris gave statistical tables of all the capital amputations performed at the Pennsylvania Hospital from 1830 to 1850 inclusive, with the view of calling attention to the great mortality which followed these operations. These tables attracted great notice, and have since been referred to by all systematic writers on surgery. The list now published is a continuation of the former, carried down for another ten years, and drawn up in a similar manner, with a summary appended of the thirty years' experience of the Hospital. The *résumé* we extract entire :—

"From the above table it will be seen that from January, 1850, to January, 1860, there were 228 capital amputations performed. Of these, 173 were cured, and 55 died.

"Forty-three were of the thigh, seventy of the leg, eight of the feet, six at the shoulder-joint, thirty-eight of the arm, fifty-two of the forearm, eight at the wrist joint, two of the hand, and one at the elbow-joint.

"One hundred and forty-six of the 228 operations were primary, being done for recent injuries within twenty-four hours after the occurrence of the accident, and of these 119 were cured, and 27 died; 42 were secondary, of which 27 were cured and 15 died; 40 were for the cure of chronic affections, of which 27 were cured and 13 died.

"Twenty-five of the whole number in the table were done at the joints, of which 23 were cured and 2 died.

"One hundred and seven of the amputations were of the upper extremity, of which 94 were cured and 13 died.

"One hundred and twenty-one were of the lower extremity, of which 85 were cured and 36 died.

"In adding the results furnished in the above ten years to those given in the volumes of the *American Journal* already referred to, for the twenty years previously, we arrive at the following results :—

"Of 428 amputations upon 424 patients, performed during the thirty years from 1830 to 1860, 321 were cured and 103 died; of these, 261 were primary, of which 54 died; 83 were secondary, of which 31 died; 84 were for the cure of chronic diseases, of which 18 died.

"One hundred and ninety-four of the amputations were of the upper extremity, of which 21 died; 234 were of the lower extremity, of which 74 died; 46 were amputations at the joints, of which 6 died.

"One hundred and eighteen of the patients operated on were under 20 years of age, of whom 108 were cured and 10 died; 133 were between 20 and 30, of whom 101 were cured and 32 died; 87 were between 30 and 40, of whom 60 were cured and 27 died; 62 were between 40 and 50, of whom 40 were cured and 22 died; 21 were upwards of 50, of whom 16 were cured and 5 died."

VI. *Physiological Observations and Experiments on a Case of Large Artificial Anus, with an Account of the Surgical and Mechanical Efforts to Cure.* By WILLIAM HUNT, M. D.—A young man was admitted into the Pennsylvania Hospital on the 23d of October, 1865, on account of an artificial anus, the result of gunshot wound, in the right iliac region, one inch within the anterior superior iliac spine, and measuring two inches and a half in its transverse, and two inches in its longitudinal diameter. The portions of the gut involved were the cæcum and colon. Previous to subjecting the patient to a surgical operation, and during the progress of recovery from it, some physiological observations and experiments were made, which seem to demonstrate that, in man, the cæcum and large intestines are merely passive receptacles for the excrement. They appeared to be totally deficient in digestive and absorbent powers, since no effects were produced by medicinal agents applied to them, nor was there the slightest digestive action exerted on pieces of tender meat passed into their interior. The mucous membrane was of a pale pink colour, utterly devoid of common sensibility; and secreted a colourless, limpid fluid, which exuded from all parts in small quantity, and invariably exhibited an alkaline reaction. The opening discharged from five to eight ounces of feces daily, mostly in the form of a soft mass, but sometimes there were lumps of well-formed matter. Their colour and odour did not differ from those of the normal discharges by the rectum. By an ingenious plastic operation, Dr. Hunt was enabled to close the

opening temporarily; but the points of connection of the flaps were gradually broken asunder by the pressure of the intestinal gases, which seems to be a more formidable obstacle to success than fecal accumulation. Attempts were also made to substitute an artificial wall for the natural one, by fitting directly into the gut a section of a very light and smooth cylinder of vulcanized rubber, with its concavity directed inwards. This apparatus was tolerated for a time, but it was finally abandoned on account of the pain and inconvenience which it frequently excited. The man now wears a simple water-bag truss, which retains the feces, until it is removed at daily intervals, when the usual amount passes from the opening.

VII. *Observations of the Action of Narcein.*—Dr. J. M. Da Costa, in this paper, which, from its negative results, is one of the most valuable in the volume, gives his experience with narcein, concerning the action of which drug it has been extensively claimed that it possesses the anodyne and soporific properties of morphia and kindred preparations, without giving rise to nausea, headache, or constipation. Ten cases are narrated in which a chemically pure article was fairly tested, in all of which its effects were of a very unsatisfactory nature. The following summary embodies the general results arrived at in the investigation:—

"On the skin it produces but little effect, far less perspiration than morphia or the other ingredients of opium. It does not, as a rule, give rise to headache, or to nausea and vomiting, and loss of appetite; but it is an exaggeration to say that these effects do not occur. Moreover, they seem to happen in women more constantly or markedly than in men. It does not constipate, may even relax the bowels. It is not an excitant; yet the face is not uncommonly flushed after its use in decided doses. Scarcely any action on the pupils is observable. No marked influence on the temperature, respiration, and pulse is perceptible subsequent to its employment. So far as noticed it somewhat lowered the temperature, and slightly lessened the pulse; the latter, however, not constantly. No such decided effect as has been ascribed to it on the urinary function was met with. In so far as it was seen to have any action, it seemed to diminish the tendency to frequent urination, rather than to suppress the amount of secretion. And with reference to its soporific and anodyne properties it appeared, in doses in which morphia is prescribed, totally destitute of either; and in larger doses uncertain, and often palpably inert. It does not allay irritation."

VIII. *Review of the Ligations of Large Arteries at the Pennsylvania Hospital between the Years* 1835 *and* 1868, *including several hitherto unpublished Cases, and a Detailed Report of a Ligation of the Left Internal Iliac Artery.* By Thomas George Morton, M. D.—Since 1835 there have occurred in the Pennsylvania Hospital only seventeen ligations of the large arteries, fifteen of the operations having been for the relief of aneurismal disease, thereby showing the rarity during this period in the hospital practice of this city of aneurisms requiring surgical aid.

The common carotid was tied in five instances, respectively for carotid aneurism, aneurism of the ophthalmic artery, varicose aneurism, traumatic hemorrhage, and aneurism of the innominata. The last three perished, the causes of death having been cerebral congestion, recurrent bleeding, and serous effusion in the lungs.

The subclavian was ligated once in the second portion of its course for axillary aneurism. The thread came away on the eighteenth day, and the man made a good recovery.

The common iliac was ligated successfully for aneurism of the external iliac. Dr. Morton took up the internal iliac for gluteal aneurism. The ligature separated on the twenty-second day, and the man returned home in the eighth week. The external iliac was tied in three instances, twice successfully for inguinal aneurism, and once for aneurism of the femoral and profunda arteries. The patient died of peritonitis on the third day.

The femoral was ligated twice for popliteal aneurism, twice for femoral aneurism, once for a pulsating tumour of the head of the tibia, and once for femoral arterio-venous aneurism. All of the cases did well.

The last case operated on was one of aneurismal tumour of the gluteal region,

spontaneous in origin, for the relief of which Dr. Morton successfully tied the internal iliac artery. The patient, a man twenty-four years of age, had suffered for five months from what he supposed to be rheumatism of the left hip, and a tumour had been visible for four months. This gradually increased in size, and measured, on his admission into the hospital, five inches and a half transversely and six inches and a half in its vertical diameter. It had the appearance of a chronic abscess; but distinct expansive pulsation and a bruit were detected. The bulk of the swelling was greatly diminished by pressure, but it speedily filled up when the circulation was unobstructed. The internal iliac was ligated on the 16th of October, and the man was discharged cured, so far as the operation was concerned, on the 11th of December. The tumour, however, had become quite soft, and some fears were entertained of deep suppuration.

IX. *A Case of Aneurism of the Arteria Innominata, Illustrating some Points in Physiology and the Principle of Mr. Wardrop's Operation.* By ADDINELL HEWSON, M. D.—A man, 51 years of age, was admitted into the hospital, in March, 1867, on account of aneurism of the innominate, for which Dr. Hewson tied the right primitive carotid on the 20th inst. The internal jugular vein was also ligated, the thread having been thrown around it in order to draw it out of the way. Seven hours subsequently, the patient was suddenly seized with greatly increased dyspnœa, that symptom having existed before the operation, the tumour was much larger and firmer, and abundant loose mucous rales were perceptible throughout the lungs. On the fourth day, the lungs had become freed; the semicircumference of the aneurism had diminished nearly one-half; it was much firmer; its pulsations were less marked; and the sphygmograph showed that the right radial artery was getting more under the influence of the movements of the blood in the heart and ascending aorta than on the day after the operation. On the sixth day, there was slight bleeding from the internal jugular, from which the thread had separated; and on the following day, the tumour was still diminishing, and no pulsation could be detected. On the afternoon of the tenth day, the tumour was very much distended, and symptoms of asphyxia set in, which gradually increased and carried off the patient on the ensuing morning.

The aneurism was found, post-mortem, to have involved the entire innominate artery and a portion of the upper wall of the arch of the aorta. The clavicle and sternum at their junction were eroded, and the upper opening of the thorax was completely filled by the tumour. The pneumogastric and recurrent laryngeal nerves were severely compressed. When laid open, the cavity of the aneurism was found to be occupied with coagula, the central portion, in area equal to the normal innominate artery, containing, however, dark grumous blood.

In his comments upon this case, Dr. Hewson calls attention to certain phenomena, which possess some value to the physiologist. The most curious were those concerning the pupil of the eye, the contraction of which before the operation was replaced by positive dilatation after it. We have not space to follow the author in his discussion of the theories of the mode of production of the movements of the iris; but we agree with him that this case gives support to the theory that the movements of the pupil are dependent upon the vascularity of the iris.

X. *On the Treatment of Continued Fevers. From Clinical Lectures at the Pennsylvania Hospital, Delivered in the Winter of* 1867–8.—In this paper, which is one of the most practical and valuable of all in the volume before us, contributed by Dr. W. W. GERHARD, the classical author upon typhoid fever, the treatment of typhoid, typhus, remittent, and yellow fevers is minutely and amply discussed, and the pathology of these affections glanced at. It is impossible to present our readers with a satisfactory abstract of the paper; to be appreciated, it must be carefully studied. One paragraph, however, will doubtless prove of interest to the numerous alumni of the University of Pennsylvania, who had the good fortune to be guided in their studies by Dr. Wood, formerly Professor of Medicine in that Institution. We refer to the exhibition of turpentine in typhoid fever, of which Dr. Gerhard says:—

"A remedy which has attracted a great deal of attention within the last few years, is the spirits of turpentine. Many medical friends of mine never treat a

case of typhoid fever without administering it, and give it often through a considerable part of the disease. I must confess, from my own experience, I cannot think it of much value. I do not believe it in any case positively injurious, excepting that it may disorder the stomach of the patient, and in that way do mischief; but, in ordinary cases of typhoid fever, I consider it perfectly nugatory. The only instances in which it seems to me to do good are when the disease is nearly ending, and the tongue suddenly cleans and becomes a little dry. Under such circumstances the oil of turpentine may be administered, in the hope of removing this condition of things, in the dose of ten drops, made in a mixture, every few hours. In the little value I attach to the spirits of turpentine, I am sorry that I differ so widely from the opinion of my respected friend Dr. Wood, who attaches so much importance to it."

XI. *A Contribution toward our Knowledge of the Pathological Changes in the Fluorescence of Tissues.* By EDWARD RHOADS, M. D., and WILLIAM PEPPER, M. D.—Not long since, Dr. H. Bence Jones gave an account of the existence in animal tissues of a substance which closely resembled quinia in fluorescence; possessed all its optical qualities; and answered every chemical test for that alkaloid. For this substance he proposed the name of animal quinoidine; and he, moreover, ascertained that the tissues yielded a more intense fluorescence after the administration of quinia. The possible connection of these facts with the pathology and treatment of malarial fever suggested itself to the authors of this paper, who entered upon a series of observations, with the view of determining whether a rapid and marked diminution in the amount of animal quinoidine naturally existing in the tissues might not be an attendant upon the morbid processes of malarial disease.

From twelve carefully-conducted observations, Drs. Rhoads and Pepper conclude that there seems to be a close connection between the diminution of animal quinoidine and malarial disease; but whether such diminution is invariably the result of the action of miasmatic poison in the human body, can, however, only be determined by further investigation. It also appears probable that a short time suffices to effect marked reduction in the normal amount of the fluorescent substance; and it may confidently be inferred that it is not essential for fully-formed febrile paroxysms to occur in order that this peculiar effect shall be produced.

No attempt is made to explain the mode in which cinchonia exercises its curative action in miasmatic disorders, this being deferred until further observations have been made, in order to learn whether it be only in miasmatic affections that animal quinoidine is materially diminished. Examinations of the blood and tissues in many other pathological conditions have been commenced; and, from the reputation of the authors as careful, accurate, and conscientious observers, we await with interest the publication of any new facts that they may develop.

XII. *Case of Penetrating Wound of the Skull, in which the Ball entered the Brain, terminating in Recovery; with Analyses of similar Cases.* By T. H. ANDREWS, M. D.—A female, 21 years of age, was accidentally shot, the ball, which weighed forty-eight grains, entering the brain at the left temporal region. A probe was passed into the substance of the brain three inches and a half in a direction downward, backward, and inward; but the ball was not detected. Recovery was rapid, without an untoward symptom; and four months and a half subsequently the patient was perfectly well, having no pain and no disturbance of the intellectual faculties.

In connection with this case, Dr. Andrews furnishes abstracts of seventy-two examples of analogous injuries, collected from various sources, in the majority of which the ball or shot remained in the interior of the skull, without producing much disturbance. His advice in regard to the proper course to be pursued in such cases is eminently proper; namely, if the whereabouts of the missile can be ascertained, and it can be extracted without inflicting additional injury on the brain, the sooner it be removed the better; under opposite circumstances, it should be allowed to remain.

XIII. *A Contribution to the History of Toxæmia.*—Dr. WM. HUNT furnishes an extremely interesting and instructive contribution to the history of blood-poisoning, as observed in his own person. On three distinct occasions within

the past ten years he has been made seriously ill by inhaling concentrated infectious miasmata emanating from the human body, the train of symptoms having been of a typhoid character, and resembling somewhat those induced by a mild form of pyæmia. It is proper to premise by stating that, while remarkably sensitive to the effects of poisonous plants, the author has never suffered any trouble from punctures or abrasions received from instruments in making dissections or performing surgical operations.

The first attack was from a dead body, and occurred in the winter of 1860. Dr. Hunt made a sweeping cut through the tympanitic belly of a subject, while standing directly over it, which was followed by the escape of a most offensive gas. He was nearly overcome, but was soon able to proceed with his work. Within twenty-four hours he was taken sick, and was utterly unfit for duty for six weeks. Professor Leidy used the same subject for class-demonstration, a day or two afterward, and both he and his assistant suffered in the same way, but not so severely.

The second attack was in the latter part of 1865, when Dr. Hunt laid open an extensive abscess of the gluteal region for a man in the hospital, whose system was greatly shattered. A tremendous gush of extremely fetid pus and gas followed, and the foul air of the morbific materials was inhaled in full force. The immediate effects rapidly passed off; but in twenty-four hours, on leaving a private patient, he was attacked with rigors, and did not quit his house for five weeks.

The third attack occurred in the summer of 1867. While removing the dressings from a very bad cancer of the lower lip, the patient gave a hard but involuntary cough directly into the author's face. He thus inhaled the full effects of the accumulated offensive discharges and the fetid breath, which were, so to speak, forcibly injected into his respiratory passages. He was sickened at once; but this soon passed off, and, as in the other cases, he was seized in twenty-four hours, and was laid up for three weeks.

The symptoms of the indisposition were precisely alike in all the attacks, and only differed in degree. In the first there was a positive chill, which was followed by high fever and delirium; while in the others there were rigors succeeded by fever, with only slight mental disturbance. Coincident with these phenomena, there were general soreness and stiffness in all parts of the body, along with severe pains in the calves, head, and back. The pulse was accelerated, and in all cases the lungs seemed to be the chief seat of the local trouble. Percussion was dull over the lower lobes, and there were subcrepitant and sibilant râles, with more or less cough, and a peculiar laboured and sighing respiration. The expectoration was viscid and scanty. The tongue was coated with a whitish or yellowish fur, and retained its moisture, but this was of a viscid nature, and caused a constant clammy or sticky sensation. Thirst was not marked. The breath was heavy and sometimes fetid. The bowels were constipated, and, when moved, the dejections were very offensive. There was much flatus; and the urine was scanty.

The most prominent and peculiar symptom was complete loathing of all forms of food, and this without any absolute nausea. As the other acute signs disappeared, utter anorexia remained, and, indeed, its subsidence was denotive of convalescence. This condition lasted for about a fortnight in the first two attacks, but not so long in the last. In addition to the foregoing phenomena, there was much mental irritability, particularly on the presentation of food, and wakefulness was also a distressing symptom. Glandular enlargements were not apparent. The pains and fever subsided in a few days in all the attacks, and they were replaced by a relaxed and a very unpleasant condition of the skin, which was moist and cold, especially at night, and about the knees and back. The cough, insomnia, and anorexia, however, underwent no immediate change. There was also loss of flesh, amounting to eight or ten pounds in the last attack, which was by far the mildest of the three.

Convalescence was indicated by the ability to enjoy food and acid drinks. For weeks after apparent restoration to health, there were shortness of breath, and a sighing respiration, which were aggravated by exertion. These symptoms

gradually disappeared, and in from ten to twelve weeks after exposure recovery was complete.

As regards the nature of the affection. Dr. Hunt places it among the varieties of toxæmia, produced by the inhalation of concentrated forms of impalpable noxious emanations from organic bodies in various stages of decomposition and disease.

The diseases for which it is liable to be mistaken are influenza, enteric fever, and pyæmia. From the former it is distinguished by the persistent anorexia, and absence of coryza. The invasion is too sudden and violent for an attack of enteric fever, and there is no diarrhœa, nor eruption, nor epistaxis. The absence of prominent local lesions, and the tendency to recovery rather than to death, serve to distinguish it from pyæmia.

In reference to the treatment, it is advised that a warm bath, a mild opiate, and subsequent rest, should first be prescribed. A saline laxative should be given on the following day, and some refreshing effervescing draught will be grateful during the febrile state. Quinia, wine, and tonic tinctures are indicated, and a cough mixture containing carbonate of ammonia will be very useful. The so-called specific remedies for toxæmic conditions are worthless.

The management of the anorexia is the most important point to be attended to. If left to his own inclinations, the patient would readily succumb from exhaustion. Rare tact, coaxing, appeals to duty and reason, and firmness to persist in getting the sufferer to take something, are the great requisites in the nurse. Milk and beef essence should be given at regular intervals. In regard to the latter article, Dr. Hunt very wisely insists that, if pushed too persistently, nothing is more distasteful, and that it should therefore, be given at longer intervals than are usually prescribed, cold milk, or some solid food being substituted in the interim.

XIV. *Notes on Medical Cases.*—Dr. Horatio C. Wood in this paper narrates, with appropriate commentaries, seven cases, all of which possess more or less clinical interest, either from their rarity, or from their illustrating some special point in pathology or therapeutics. The value of the first, one of acute psoriasis terminating in death, is, however, greatly impaired by the fact of there having been no post-mortem examination; and we must express our astonishment in finding that "the pernicious system which prevails in the hospital made it necessary to gain the consent of the relatives, which was in the present case simply impossible." This statement of Dr. Wood requires no comment; but we are disposed to think that the regulation could be changed by proper representation and exertion on the part of the surgical and medical staff of the Pennsylvania Hospital, in which institution the case occurred.

XV. *Cases of Progressive Locomotor Ataxia, with Remarks.*—Dr. James H. Hutchinson, the author of this essay, has had under his immediate care three well-marked examples of progressive locomotor ataxy, which are reported in detail. In the first, seventeen years elapsed between the appearance of the first derangement of vision and death, which occurred eight years after the loss of co-ordinating power. In the second case, the interval between the first symptom and the fatal termination was six years, and the impairment of vision was neither so early nor so prominent a phenomenon as in the first instance. In the third case, the disease was of very recent origin, and, as the patient passed into the hands of another physician, the result is not known.

It is to be regretted that Dr. Hutchinson was unable to procure post-mortem examinations of the bodies of his two fatal cases, since accurate pathological observations of the changes in the nerve centres in this affection are confessedly rare. Assuming, however, that his cases agreed with those recorded by other writers, and that dissection would have revealed the lesions described by Trousseau, Clarke, Eisenmann, and others, he discusses a few of the most prominent symptoms, along with the pathology, etiology, and treatment of this peculiar disease, of which he gives a good epitome. In the second case, one grain of nitrate of silver, for which remedy great success has been claimed by Wunderlich, was administered daily for two months, but it failed to effect any good.

XVI. *Poisoning from Atropia treated by Opium; subsequent Recovery.* By D. Hayes Agnew, M.D.—A woman had administered to her, through mis-

take, one grain and a half of the sulphate of atropia in solution. Characteristic symptoms soon set in; but the toxical effects of the alkaloid were counteracted by two hundred drops of the tincture of opium given in a period embracing eighteen hours.

XVII. *Brief Note on Fracture of the Acromion Process of the Scapula.*—Dr. A. D. HALL, the author of this short article, gives the details of a case in which one inch and a half of the acromion process were broken off, and displaced downward. A Velpeau's bandage for fracture of the scapula was applied, and retained for four weeks, and two years subsequently, the functions of the shoulder-joint were perfect.

During his residence at the Pennsylvania Hospital Dr. Hall met with another example of this uncommon accident; and, in November, 1858, he exhibited to the Pathological Society of Philadelphia a specimen, removed from an elderly man, dead of cancer of the stomach, showing fracture of the acromion process, with displacement downward and forward into the glenoid cavity, to which it was bound down by a dense ligamentous structure. The articulation of the fragment with the clavicle was not disturbed. The arm had been removed at the shoulder-joint several years previously.

XVIII. *A Case of Retroversion of the Uterus, the Posterior Wall of which was the seat of a large Mural Fibrous Tumour.* By GEORGE PEPPER, M. D.—A widow, aged fifty years, who had suffered with procidentia uteri for eighteen months, after a hard day's work was suddenly seized with retroversion of the uterus, in the posterior wall of which was seated a large fibrous tumour. When Dr. Pepper saw her, twelve days subsequently, the bladder was greatly distended; the bowels were obstinately constipated; there was anorexia, with frequent nausea, and, for the last day or two, occasional vomiting; and her forces were rapidly failing. The urine was drawn off, when a vaginal and rectal examination readily detected a dense, resisting, spheroidal mass, about the size of a fœtal head, which distended the recto-vaginal pouch, and completely filled the pelvic cavity. The os uteri could not be felt.

The bladder and rectum having been evacuated, and an anæsthetic administered, the author endeavoured to elevate the mass by means of a colpeurynter, forcibly distended with water. This measure proving unsuccessful, the woman was placed on her chest and knees, and by prolonged and forcible manipulations by the fingers introduced into the rectum and vagina, the tumour was slowly dislodged, and the uterus restored to its proper position. It was now evident that the morbid growth involved the entire posterior wall of the uterus from the cervix to the fundus. The os readily admitted a sound for several inches; but it was so much elevated that it could not be reached by a single finger in the vagina.

The after-treatment consisted in keeping the uterus elevated in the pelvis by a colpeurynter introduced into the vagina; for which a glass globe pessary was substituted at the expiration of twenty-four hours. Tannin and opium suppositories were employed to favour contraction of the dilated vagina and rectum, and she was placed on Basham's iron mixture, with a nutritious diet, and her bowels were kept regulated by mild aperients. At the end of two weeks the pessary was dispensed with, and there was no tendency to a return either of the displacement or of the pre-existing procidentia.

From his remarks upon this case, which was one of considerable practical interest, we learn that Dr. Pepper has been unable to find a full account of a single similar instance on record. Retroversion and impaction in the pelvis of the uterus, whether in the gravid condition or from the existence of subinvolution, is, however, of comparatively frequent occurrence.

XIX. *Heat-Fever* (*Sunstroke*).—Dr. JAMES J. LEVICK, in this paper, considers the pathology of sunstroke, or heat-fever, as it is termed by Professor Wood, as well as its nosological classification, and its treatment. In view of the fact that the author has presented to the profession the prominent points of the paper in the pages of this journal, at various times during the past ten years, we only deem it necessary to make the following extract, which embodies a recapitulation of its contents.

"Insolation or sunstroke shows itself in two obvious forms—first, *exhaustion from heat;* second, *heat-fever.*

"*Exhaustion from heat* has a feeble and moderately frequent pulse, a moist skin, and a tendency to syncope on the slightest exertion. It implies a loss of power without obvious structural change, and is successfully treated by rest, the supine position, and the free use of stimulants.

"*Heat-fever* has a feeble and very frequent pulse, a pungently hot skin, a temperature, as shown by the thermometer, of from 104° to 111° F., and is often attended with great nervous disturbance. It has for its constant pathological condition an altered state of the blood, which is liquid after death, and exhibits, under the microscope, shrivelled and crenated corpuscles. It is successfully treated by the rubbing of *large pieces of ice* over the entire body of the patient, until consciousness is restored, after which iced wine and water may be cautiously administered.

"Heat-fever, whether determined by the resemblance of its symptoms during life or of its phenomena in death, finds its proper nosological classification in close association with typhus fever, spotted or petechial fever, and the plague."

XX. *On the Use of Paper for Surgical Dressings.*—Dr. Addinell Hewson, struck with the fact that paper had been used in the place of lint as a surgical dressing, in the recent campaigns of the Prussian army, tested its practicability at the Pennsylvania Hospital, and, after numerous experiments, has settled on the common newspaper as being the best and the cheapest substitute for lint, linen rags, or muslin. During the whole of his six months' service he used paper dressings to the exclusion of all others—except, of course, in the application of poultices—in all varieties of accidental and surgical wounds, with the result of demonstrating that they were not inferior to the other means which he had usually been in the habit of employing for similar purposes. That they possess over patent lint the advantage of economy, which is no small consideration in a large charity, is shown by the author's estimates, from which it appears that while a yard of good patent lint costs thirty-three cents, a sheet of paper, which equals that article in usefulness as a surgical dressing, costs only one cent.

Dr. Hewson has also made paper available in the place of oiled silk, by using tissue, or Manilla paper coated with a thin layer of yellow wax. In this way not only a saving of from four hundred to six hundred per cent. (*sic*) was gained; but what is more important, waxed paper affords the advantage of discarding everything appertaining to the dressings each day, by which one source at least of renewing contamination experienced in the employment of oiled silk is avoided.

XXI. *Extract from a Clinical Lecture on Certain Forms of Muscular Rheumatism, particularly Wryneck and its Treatment.* By J. M. Da Costa, M. D.—A servant girl, nineteen years of age, was admitted into the hospital, on the 15th of February, on account of subacute rheumatism, of two months' standing, of the left ankle, knee, and hip, these articulations being stiff and painful on motion, without there being any absolute swelling. A few days after admission, the neck was observed to be stiff, which, by the 28th, had increased to marked torticollis. She was on the iodide of potassium in five grain doses every eight hours, and Dover's powder at night. Under this treatment, she improved much; but no effect was produced on the neck. The injection of sulphate of atropia into the tissues over the contracted sterno-cleido-mastoid and trapezius muscles then suggested itself to Dr. Da Costa, and one-fiftieth of a grain of that alkaloid in solution was used hypodermically, on the 8th, 9th, and 10th of March. On the 12th, all distortion had disappeared, and the head could be moved freely and without pain in every direction. The solution was also injected over the affected joints, but no beneficial result followed.

In his comments upon this case, the author strongly recommends that the atropia be used in similar cases, that is, when the affection is recent, or before structural changes have taken place in the muscles or the surrounding textures, in cases at all resisting, and when it is feared that so much rigidity of the muscles may occur as to render it difficult for them to regain their former condition. In chronic cases, where wasting of the affected muscles has occurred,

or in congenital torticollis, he thinks it will prove a useful adjunct to, if it has not the power of being a substitute for the tenotome. In those instances of jerking, violent spasm, of the sterno-cleido-mastoid, causing torticollis, in which subcutaneous division of the muscle affords only temporary relief, atropia injections seem well worthy of careful trial; while in paralytic wryneck, or in wryneck from disease of the vertebræ, it is not probable that they would prove beneficial.

Dr. Da Costa has also successfully resorted to this therapeutical procedure in a case of recent lumbago. One-fortieth of a grain was employed, and the constitutional effects were very marked. These, however, passed off, and, with them, the pain and rigidity of the muscles disappeared. For nine weeks, when he was last heard from, the patient had not had any return of the trouble.

XXII. *List of the more important Specimens added to the Pathological Museum during the past year, with Descriptions.*—Dr. WILLIAM PEPPER, the Curator, in this paper gives an account of forty-four specimens added to the museum of the hospital during 1867, nearly one-half of which have previously been described in the pages of this journal, either in connection with the Transactions of the Pathological Society of Philadelphia, or in articles contributed by Dr. Morton and Dr. Hunt. Three woodcuts illustrate the report, and depict the appearances of ovarian cysts.

A specimen of piliferous cyst of the right ovary, communicating with the intestinal canal, is particularly novel and interesting. The patient was admitted with symptoms of intestinal obstruction, and there was a large tumour of the right side of the abdomen. For several weeks preceding death, an uncontrollable, exhausting diarrhœa existed, and much hastened the fatal result. On post-mortem inspection there were evidences of old peritonitis. The tumour, which filled the right iliac region, and encroached upon the hypochondria and the opposite side of the median line, was found to be formed entirely by the agglutination of various parts of the viscera. The small intestines were extensively ulcerated, and, upon reaching a point, six inches above the original seat of the ileo-cæcal valve, the ileum came to an abrupt end, having sloughed away. The cæcum, with its appendix, and the beginning of the ascending colon had also disappeared. The tumour also contained a gangrenous cyst, lying free in its cavity, filled with fluid fecal matter and a large mass of brown human hair, matted together by sebaceous material. It was impossible to discover the original point of attachment of the cyst, although it had been undoubtedly developed from the right ovary. Dr. Pepper's explanation of the specimen is that the cyst "had been detached from its connections, became gangrenous, involved the adjacent parts of the intestines in destructive inflammation, and had itself been surrounded by a pseudo-cystic cavity formed by adherent viscera, into which the ileum freely poured its fecal contents."

XXIII. *Extract from the Statistical Report of the Pennsylvania Hospital, for the year ending April 27th*, 1867.—From this report we learn that 1944 cases were admitted during the year, of which 9.25 per cent. were fatal. 1241 cases were surgical, and 703 medical. Of the former, 99 died, while of the latter, 81 were fatal. Since the establishment of the Hospital in 1752, there have been admitted into it 79,181 patients, of whom 9.5 per cent. died. Including those admitted into the Pennsylvania Hospital for the Insane, the whole number of patients is 84,372.

We have now concluded our analysis of this instructive and interesting volume, and it remains for us to award to the medical and surgical staff, as well as to the editors, under whose supervision it has appeared, the credit, which they have justly earned, of having made a start in rendering the valuable material contained in the Hospital available to the profession at large. With its two hundred and twenty-five beds, which are constantly filled with carefully selected cases, the Pennsylvania Hospital must always abound in varied clinical facts, and an annual report, embracing appropriate and practical commentaries upon the most important cases, along with accounts of novel forms of disease and new or remarkable operations, cannot fail to prove of great benefit and interest to practitioners everywhere, and should meet with the encouragement which it richly deserves. In the language of the distinguished author of the

introductory paper, only "Let the Pennsylvania Hospital Reports be the true representatives of the spirit and power of her inner life—plain, sober, discreet, honest, exact, and that shall be all we will ask of her in this relation."

The papers, we need scarcely add, possess various degrees of merit; but, with one or two exceptions, we conscientiously think them highly creditable to the industry and talents of their authors, while several, from the patient research and originality evinced in their preparation, are of a very superior character. Thirteen are contributed by the staff proper of the hospital; two are from the pens of former attending physicians and surgeons; six are contributions of former resident physicians; one is an extract from the hospital records; while only one, and this is by no means the least interesting, appears to have been written by a gentleman who never had a recognized official connection with the institution. This plan of making up hospital reports is that pursued by the great charities of London; and, while we can offer no serious objections to it, it must be manifest to the reader that he is treated to rather more than the experience of the staff proper, that cases, indeed, are detailed which were never observed in the walls of a hospital. In a measure then, the title of the work, in common with that of similar productions, is a misnomer; but it would be unreasonable to expect an annual octavo volume of four hundred pages from eight physicians and surgeons.

A few typographical errors, and several contradictory statements, which are, however, of no practical moment, mar the beauty of the volume. The style in which it is produced reflects great credit upon the enterprise and liberality of the publishers.

S. W. G.

Art. XVIII.—*Medico-Chirurgical Transactions.* Published by the Royal Medical and Chirurgical Society of London. Volume L. (Second Series, Vol. XXXII.) 8vo. pp. lxiv. 649. London: Longmans, Green & Co., 1867.

The present volume of this valuable series contains twenty-four papers of a practical nature, and is illustrated with eleven plates, twenty-nine lithographic diagrams, and twenty-four wood-cuts. In accordance with our usual practice, we propose to give our readers a brief notice of the several papers, taking up first those of more strictly *surgical* interest, and considering afterwards those of a medical character.

I. *A Case in which Ovariotomy was twice successfully performed on the same Patient*, by T. Spencer Wells, F.R.C.S., etc.—An abstract of this paper has already appeared in the Quarterly Summary of this journal for January, 1867 (p. 261). The author adds to the history of his patient some interesting remarks upon the occurrence of disease in both ovaries at the same time, or in one after the removal of the other.

II. *Sequel to a Case of Colotomy for Vesico-Intestinal Fistula, death having ensued from Affection of the Bowel higher up*, by Timothy Holmes, F.R.C.S.—An account of this case appeared in the preceding volume of the *Transactions*, and was published in the form of an abstract in the Quarterly Summary of this journal for July, 1866 (p. 251); see also notice in number for July, 1867, p. 218. The patient was entirely relieved by the operation for about fifteen months, at the end of which time feces again appeared in the urine, and a few weeks of extreme suffering preceded death, which took place on October 26, 1866, the operation having been performed in the month of June of the previous year. A post-mortem examination entirely confirmed the diagnosis made by Mr. Holmes at the time of the colotomy, there being no malignant disease of any part, and death having resulted from the occurrence of a fresh ulceration between the bladder and the cæcum. This paper is illustrated with a wood-cut, which sufficiently exhibits the morbid appearances.

III. *Two Cases of Periodical Inflammation of the Right Knee-joint; with Remarks*, by Charles H. Moore, F.R.C.S., &c.—An abstract of this paper may be found in the number of this journal for April, 1867 (p. 536). Mr.

Moore's remarks are of much interest, and may be read with profit by all surgeons.

Following our plan of grouping together the papers of special surgical interest, we shall next invite the attention of our readers to—

V. *On Ulceration of Nævus*, by T. PRIDGIN TEALE, Jr., F. R. C. S., etc.—The principles which Mr. Teale advocates are, 1. "That in a large majority of cases in which the nævus is more or less subcutaneous, the new growth is surrounded by condensed connective tissue, forming a more or less perfect capsule, and that this limiting capsule is sufficiently distinct to enable the surgeon to coast along the surface of the tumour, enucleating to a great extent, and using the knife here and there, if necessary to assist the process of enucleation;" and 2. "That when a portion of the skin covering a nævus is involved in the disease, it is not necessary to sacrifice such diseased skin, as it may be dissected off the surface of the tumour, and, being retained as a cover to the wound, will regain gradually its natural appearance."

Three cases are detailed in which the operative procedures were based upon a consideration of these principles; and a fourth, in which instant death was caused by the injection of the perchloride of iron.

VI. *On a Case of Internal Strangulation of the Bowel by a Band, associated with a Reducible Hernia; successfully treated by Operation*, by THOMAS BRYANT, F. R. C. S., etc.—This case has already been presented to our readers in the number of the Journal for July, 1866 (p. 263), and was likewise referred to in connection with a somewhat similar case which occurred in this city, in a notice of Dr. Brinton's posthumous monograph, in the number for January of the present year (p. 238). We shall next invite attention to—

XIII. *On the Influence of Inadequate Operations on the Theory of Cancer*, by CHARLES H. MOORE, F. R. C. S., etc.—Mr. Moore, it will be remembered, is one of the most prominent advocates of the view that cancer is a disease of local origin, its spread being due to diffusion from a centre in a more or less easily traceable manner, and not depending on the existence of any cancerous diathesis. The present paper furnishes the details of fourteen interesting cases from which the author deduces the following conclusions:—

"That the recurrence of cancer is due to local conditions:

"That these conditions are not regional, so as to belong to structures out of continuity with the first tumour:

"That neither are they organic, whether as indiscriminately involving the residue of a mamma operated upon, or so as to be transferable to the second breast, in consequence of the removal of that first affected:

"That, on the contrary, recurrent cancer begins near the scar:

"That, when free in both directions, it tends toward the axilla earlier than to the residue of the breast:

"That, consequently, centrifugal dispersion, not organic origin, determines the recurrence of cancer:

"That cancer of the breast requires the careful extirpation of the entire organ:

"That the situation in which this operation is most likely to be incomplete is at the edge of the mamma, next the sternum:

"That, besides the breast, unsound adjoining textures, especially skin, should be removed in the same mass with the principal disease."

XIV. *Record of Cases treated in the Lock Hospital by Syphilization*, by JAMES R. LANE, F. R. C. S., and GEORGE G. GASCOYEN, F. R. C. S.—Twenty-seven cases in the Lock Hospital were submitted to syphilization by the authors of this paper, under the personal supervision of Professor Böeck, of Christiania, who remained three months in England for the purpose. Details of these cases are given in the paper before us, which we cannot but regard as a most valuable contribution to our knowledge of syphilis. The conclusions of the writers, which we quote in their own language, are as follows:—

"It is the impression of one of us (Mr. James Lane) from the observation of these cases, that syphilization does exert some beneficial and specific influence over the progress of the disease, possibly in the way ascribed to it by Dr. Böeck. It has appeared to him that the treatment conducts patients through the dis-

ease more safely and rapidly than if they are left to themselves; that it leaves them with less liability to relapse, and that their relapses when they do occur are milder in character.

"Mr. Gascoyen, on the other hand, thinks that the natural tendency to recovery which an early and uncomplicated constitutional syphilis exhibits with the lapse of time, and under circumstances favourable to the general health—such as the dietary, rest, regular hours, etc., of a hospital afford—is sufficient to account for the subsidence of the secondary symptoms during syphilization; and he is doubtful whether relapses are less frequent under this than under the ordinary methods of treatment. . . . . Differing, however, as we do, on the scientific aspect of the question, we are entirely in accord as to its practical bearings, and we are decidedly of the opinion that syphilization is not a treatment which can be recommended for adoption. We consider that, even if it could be admitted to possess all the advantages claimed for it by its advocates, its superiority over other modes of treatment, or in many instances over no treatment at all, would not sufficiently compensate for its tediousness, its painfulness, and the life-long marking which it entails upon the patient."

The various inoculations were made from the matter of both hard and soft sores, and it was found that, while that from the latter was generally easily inoculated, it was not so always; and on the other hand, that the matter obtained from the indurated sore, did occasionally, although comparatively rarely, produce well-marked positive results. We need hardly say that if these observations are confirmed, they will bring some confusion into our ideas as to the distinctive characters of the two diseases.

XVI. *Statistical Details of Three Years' Experience in respect to the form of Amaurosis supposed to be due to Tobacco*, by JONATHAN HUTCHINSON, F.R.C.S., etc.—These tables embrace thirty-seven cases, all except three being in the male sex. Of the three women, only one used tobacco (in the form of snuff), one had suffered severely from constitutional syphilis, and in the remaining one no cause whatever for the amaurosis could be assigned. Of the thirty-four cases among men, tobacco was the only apparent cause in twenty-six; five others were smokers, but in them the amaurosis was attributable to other sources, and in the remaining three, Mr. Hutchinson considers it scarcely possible that tobacco could have been the cause of the disease.

XVII. *A Case of Aneurism of the Femoral Artery, the Sac of which Burst, and its Treatment; with Observations*, by JOHN BIRKETT, F.R.C.S., etc.—The aneurism in this case was situated in the course of the right femoral artery, and had existed for about eight months, the sac having burst only ten hours before the patient's admission to Guy's Hospital. The operation performed by Mr. Birkett consisted in laying open the sac, and securing the vessel with ligatures at points immediately above and below the aneurismal tumour. The lower ligature dropped on the tenth day, and the upper on the fifteenth. Secondary hemorrhage from the proximal extremity occurred on the seventeenth day, and required the opening of the wound and the reapplication of a ligature. The latter became detached on the eighth day (twenty-fifth from the operation). Two slight subsequent hemorrhages, at an interval of several days, delayed but did not prevent the healing of the wound, which was finally cicatrized at the end of eight weeks.

Mr. Birkett appends some interesting remarks as to the cases in which the operation as performed (generally known as the "old operation," or that of Antyllus) should be preferred to either amputation above the seat of the disease, or the ordinary Hunterian operation for aneurism. Our readers will find an important case of traumatic brachial aneurism in which the old operation was resorted to, reported by ourselves, in the *Transactions* of the Philadelphia College of Physicians for February 1, 1865.—[See *Amer. Journ. of Med. Sciences*, for July, 1865, p. 97.]

XIX. *Contributions to the Pathology of Aneurisms and Tumours, involving the Upper Portion of the Chest and Root of the Neck*, by JOHN COCKLE, M. D.—Five interesting cases are narrated at length, and illustrated with three lithographic plates, embracing nine figures. We quote Dr. Cockle's remarks as to the diagnosis of innominate aneurisms.

"It is only when the distal end of the trunk becomes the seat of aneurism that accuracy of diagnosis is attainable, though, in such a case, the origins of the subclavian and carotid arteries often share the dilatation. Certain signs and symptoms have been ascribed to innominate aneurism. Their value is high, directly as intra-thoracic disease can be eliminated; it becomes, as has just been shown, extremely small as the evidence for such disease increases. This is by far the most important point in diagnosis. The only possible source of error is the rare fact of an aortic sac arising from the convex wall of the arch and mounting up the neck. Valuable aid is afforded by the knowledge of some antecedent local injury, or violent and unusual effort (for very many of such cases are traumatic). These points determined, should severe pain of the right shoulder, clavicle, right side of the heart, neck, and arm, with local venous congestion or œdema, precede the appearance of a pulsating tumour, which, emerging from beneath the right sterno-clavicular articulation, and often displacing the head of the clavicle during its ascent, distends the space between the heads of the sterno-mastoid muscle and fills the *episternal notch;* should there be a marked weakening of pulsation in the right radial and carotid arteries, pressure upon one or other artery lessening the impulse on the tumour; should a murmur, loudest over the tumour and at the sterno-clavicular articulation, diminish downwards, yet ascend the arteries on the right side, if pervious, such murmur being absent on the left side, we may with tolerable safety diagnose an aneurism of the terminal portion of the innominate artery."

XX. *On the Repair of Arteries and Veins after Injury.*—This paper is the joint production of HENRY LEE, F. R. C. S., and LIONEL S. BEALE, F. R. S., etc.—It possesses great interest, as the question discussed is still an open one in the minds of many surgeons; as a proof of this we may refer to Dr. Addinell Hewson's paper on Acupressure in the first volume of the *Pennsylvania Hospital Reports* recently published, where the opinion is maintained that wounds of arteries are united by adhesion of coagulable lymph, effused from the vasa vasorum, and without there being any necessity for the formation of a clot. (*Pennsylvania Hospital Reports*, vol. i. p. 130.) Mr. Lee's and Prof. Beale's observations, as narrated in the article now under consideration, lend no support whatever to this view; it will probably be more satisfactory, however, to our readers to hear their opinion in their own words.

"If the free escape of blood from a small wound made through all the coats of an artery be prevented by closure of the external wound, clots are of course formed in the areolar tissue and among the other textures external to the vessel, and thus the escape of blood gradually ceases. In our specimens the blood in the areolar coat of the artery was found to extend to some distance from the seat of the injury. The opening *in the elastic coat of the vessel* is not, however, immediately occupied by blood, but, as has been shown, is gradually filled up with a perfectly colourless substance. This material which resembles the fibrin found in some aneurismal sacs, is, like that substance, deposited from the blood layer after layer until the space is filled up. Sometimes . . . . the process continues until an actual elevation, projecting above the level of the inner surface of the artery, is formed. The thin laminæ of transparent fibrin are well seen in Figs. 4 and 6, and from their arrangement it is evident that they have been formed from the blood which flowed along the vessel, and not from any material poured out from beneath by the vasa vasorum or from the arterial tissues. We do not, however, regard the material as a mere deposit of fibrin from the blood, but are disposed to think that it is formed by the agency of the white blood corpuscles, which we know would adhere to the surface of the blood-clot which occupies the lower part of the wound. It seems probable that these masses of germinal matter, as they slowly move over the surface, form the material allied to fibrin figured in the drawings. This substance, it must be remembered, has been produced within three days, and yet it exhibits a certain definiteness of arrangement. It adheres imperfectly to the surface of the artery, but firmly to the comparatively rough lips of the wound, and by its slow contraction it no doubt draws these towards each other. Thus we believe is formed, layer after layer, a temporary tissue, which, backed up as it is by a thick clot,

is strong enough to resist the ordinary lateral pressure of the blood." This paper is adorned with several well executed illustrations.

XXII. *On a Case of Concussion—Lesion, with extensive Secondary Degenerations of the Spinal Cord, followed by general Muscular Atrophy.* By H. CHARLTON BASTIAN, M. D., etc.—This case, the general nature of which is sufficiently expressed by the title, was one of so-called concussion of the spinal cord, in which temporary improvement was after about two months followed by gradual emaciation and exhaustion, death finally occurring rather less than six months from the date of the injury. The post-mortem appearances and the results of microscopic inspection of the cord are given in detail, and the whole subject discussed in a thorough and instructive manner. For the particulars we must refer our readers to the paper itself, merely noting here a very important point—that whereas the cord, when examined with the microscope, was found extensively degenerated, to the naked eye it presented absolutely no morbid appearances whatever.

This paper is quite elaborate, and is illustrated with three lithographic plates.

The last of the surgical papers is—

XXIII. *A Third and Fourth Series of Fifty Cases of Ovariotomy, with Remarks on the Situation and Length of the Incision required in this Operation.* By T. SPENCER WELLS, F. R. C. S., etc.—The first series of fifty cases was published in the 46th, and the second, of the same number, in the 48th volume of the *Transactions*. The record of the present paper brings up the entire number of the author's operations to two hundred. Of the first hundred cases, Mr. Wells lost thirty-four; while the mortality in his second hundred has been reduced to twenty-eight. Of nine cases where the operation was not completed, four died. The most favourable ages for the operation are below twenty, and between forty and fifty. The mortality is about nine *per cent.* less among single women than among the married. In Mr. Wells's first hundred cases the deaths among private patients were ten *per cent.* more numerous than among his hospital patients; in his second hundred cases this proportion has been exactly reversed.

With regard to the influence of the length of incision upon recovery, Mr. Wells has found that where it has not exceeded six inches, the mortality has been twelve *per cent.* less than where that limit has been passed. Mr. Wells uniformly makes his incision in the linea alba, and pointedly condemns the practice lately advocated by Dr. H. R. Storer, of Boston, of making the incision in the track of one of the rectus muscles. (See *American Journal of the Medical Sciences*, Jan. 1866, p. 125, note.)

We have thus concluded our review of the surgical portion of the present volume of *Transactions*, and we doubt not that our readers will coincide in the favourable opinion we have formed as to its interest and practical value.

J. A., JR.

We shall now invite attention to the papers appertaining more especially to medicine. The first is—

IV. *On the Nature of the Waxy, Lardaceous, or Amyloid Deposit.* By WILLIAM H. DICKINSON, M. D., etc.—The author has had the opportunity of observing 60 cases of waxy or amyloid degeneration of the solid organs, and has found that in 46 of these cases there was a well-attested history of suppuration, and that in 4 others suppuration had probably preceded the outbreak of the disease. Comparing this result with those shown by the cases collected by Dr. Wilks (*Guy's Hospital Reports*, 1856 and 1865) and by Dr. Stewart (*Edinburgh Monthly*, 1861 and 1864, and *Brit. and For. Med.-Chir. Rev.*, 1866), he finds that of 109 cases, suppuration had existed in 83; and the fact that these two gentlemen collected their cases without reference to antecedent suppuration, makes these figures more valuable.

In speaking of the test for this kind of degeneration, iodine and sulphuric acid, he says that he has never been able to produce the blue tint spoken of by Virchow, but that a reddish-brown colour followed their application to the diseased tissue, instead of the yellow colour which is obtained normally. He has found, moreover, that we possess in sulphate of indigo as good a test as iodine; the healthy liver, when soaked in a weak solution of this salt, becomes of a blue

colour, which changes rapidly to green, but a waxy liver so treated retains the colour. The colours obtained by iodine and sulphate of indigo are not destroyed if the affected tissue be soaked in alcohol, acids, or aqua ammoniæ, but fade when it is treated with a solution of caustic soda or potassa; and a waxy liver first treated with a solution of either of these alkalies, fails to respond to either test. Dr. Dickinson naturally infers from this that there is a deficiency of these substances in the organs which have undergone this form of degeneration, and this inference he proves to be correct by a comparison of the analysis of a healthy liver with that of a waxy liver; in the latter soda and potassa are found to be decidedly diminished in quantity, and this deficiency he explains by the suppuration. Pus, as is well known, contains both these substances in larger proportion than the blood; hence a drain of this kind cannot long continue without the occurrence of the result above indicated. He thinks that the deposit in the organs consists essentially of dealkalized fibrin, and says that if fibrin be treated with dilute hydrochloric acid, and then the solution evaporated to dryness, a substance will be obtained which reacts with iodine precisely as the amyloid liver. He proposes to apply the term "Depurative" to the disease, as significant of the process which is its most frequent cause. The objection to the word is, as he himself says, its frequent use in another sense.

The practical deduction to be drawn from this paper is that the exhibition of alkalies is imperatively called for, not merely during the course of the disease, but also in all surgical affections which are accompanied at any stage by profuse suppuration.

VII. *On the Condition of the Urine in three cases of Epilepsy*, by F. W. GIBSON, M. D., etc.—The examination of the urine in mental diseases has acquired some interest in this city, from the attempt by the prisoner's counsel, in a recent trial for murder—to prove the insanity of the accused, by the presence of oxalate of lime in his urine. As a result of the analysis of the urine in these three cases, Dr. Gibson says: "There is no constant change in the urine, although there appears to be some connection between the occurrence of the fits and increase in the water and urea, and this increase is subsequent to the occurrence of the fits." He also adds: "I may state in conclusion, that I have taken the temperature of a great many epileptics, both during the fits and at various other times, and that in no case of uncomplicated epilepsy have I found any deviation from the normal standard."

VIII. *Acute Poisoning by Phosphorus; Jaundice; Death on the fifth day. Fatty Degeneration of the Liver, Kidneys, Gastric Follicles, Pancreas, Heart, etc.*, by SAMUEL O. HABERSHON, M. D., etc.—This article contains the history of a case of acute poisoning by phosphorus. The patient, a woman aged 28 years, took in mistake for vinegar, some rat poison, which had been mixed with water; the quantity of phosphorus taken in this way being estimated at 5 grains. The symptoms which immediately followed the swallowing of the mixture were burning pain in the mouth and throat, phosphorescent breath, and violent vomiting and purging. All these symptoms, however, ceased in two hours, and no others appeared until the fifth day—when she was seized with violent pain in the back, and her skin, a short time afterwards, was observed to be deeply jaundiced, with here and there an ecchymotic patch. In this condition she was brought to Guy's Hospital. The thermometer placed in the axilla indicated only a temperature of 89.8° a few hours after admission. The case terminated on the same day; death being ushered in by the vomiting of a dark grumous fluid. The *post-mortem examination* showed a general tendency to the occurrence of ecchymoses not only in the skin but in some of the internal organs, but the most marked lesions were found in the solid organs of the abdomen, and are thus described by Dr. Habershon:—

"The cells of the liver were gorged with fat, and the nuclei were lost; so also with the kidney, the uriniferous tubes were distended with highly refracting globules, which were soluble in ether. The gastric follicles were distended and contained numerous fat corpuscles; the pancreatic glandular cells also presented oil globules. In the spleen minute highly refracting granules were observed, but no cellular structure. The voluntary muscular fibre was partially degenerated; some portions presented the transverse markings, others consisted

entirely of highly refracting particles; similar partial degeneration was found in the heart." Dr. Fagge administered gr. j of the rat poison to a healthy rabbit, which caused its death on the fourth day; the liver of the animal and its muscles from the thigh were found to have undergone fatty degeneration, but the heart and kidneys were not so much altered.

IX. *Poisoning by Phosphorus; Jaundice; Death in six days; Fatty Degeneration of Liver and Kidneys*, by THOMAS HILLIER, M. D., etc.—The author as an addition to the case reported by Dr. Habershon, gives the history of a case of a child, who was poisoned by sucking Lucifer matches. In this case as in the other, death took place on the sixth day, and was preceded by convulsions. The autopsy revealed the fact that the intestines and stomach contained altered blood and that the liver and kidneys had become fatty.

X. *On the Pathology and Treatment of Cholera*, by GEORGE JOHNSON, M. D., etc.—In this paper the peculiar views of Dr. Johnson are sustained with his usual ability, but the profession is so familiar with these views that it is unnecessary to give an abstract.

XI. *On the Treatment of Cholera and Epidemic Diarrhœa; with a Record of Cases*, by J. WILSON MCCLOY, M. D., etc., and ROBERT ROBERTSON, M. D., etc.—This is also a paper communicated by Dr. Johnson, and in it the correctness of his views of the treatment of cholera is advocated and is thought to be established by the results of the experiments made by these gentlemen. The number of cases treated was 375. Of those treated with castor oil alone, 30.45 per cent. died; of those treated with castor oil and the liberal use of stimulants, 41.37 per cent. died; of those treated with astringents, stimulants, ice, hypodermic injections, camphor, etc., 71.42 per cent. died. In no case, is there reason to suspect that there was any selection of cases made. The conclusion which these gentlemen draw is, of course, in favour of what is known as the eliminative plan of treatment.

XII. *A Study of the Influence of Weather and Season upon Public Health, made upon above* 217,000 *Cases of Sickness newly occurring at Institutions for the Sick Poor in Islington, during* 1857–1865. *I. The Influence of Atmospheric Temperature*, by EDWARD BALLARD, M. D., etc.—This is a very long and valuable paper, but one which it is difficult to analyze. We must, therefore, content ourselves with giving a few of the conclusions at which Dr. Ballard arrives.

"Rises of mean weekly temperature were associated with increase of sickness (61.73 per cent.), much more frequently than with decrease of sickness (37.75 per cent.).

"That the rises themselves were influential in producing the greater frequency with which increase of sickness took place, is shown by the observation that the frequency with which increase of sickness occurred, was greater when the extent of the rises was great, than when it was comparatively small.

"Falls of mean weekly temperature were associated with decrease of sickness (58.54 per cent.), much more frequently than with increase of sickness (39.37 per cent.).

"That the falls themselves were influential in producing the greater frequency with which decrease of sickness took place, is shown by the observation that the frequency with which decrease of sickness occurred, was greater when the extent of the falls was great, than when it was comparatively small."

XV. *Observations on the Temperature and the Urine in Typhus Fever*, by CHARLES E. SQUAREY, M. R. C. S., etc.—The author has made a series of observations on eighteen typhus fever patients in the London Fever Hospital, in regard to the temperature during the febrile stage and in convalescence, and also as regards the amount and constitution of the urine. He found that the thermometer always marked a high degree of heat during the first seven to nine days of the fever, that generally between the ninth and tenth days the defervescence commenced, that this instead of being sudden, as asserted by Drs. Buchanan and Aitken was always gradual, and that the highest marking of the thermometer was 105.2°. Little or no information can be drawn from the state of the temperature in a diagnostic point of view, as by it we cannot distinguish the commencement of typhus fever from that of smallpox; but that as regards prog-

nosis, a long-continued high temperature is not so unfavourable as a sudden fall in the temperature, the other symptoms continuing with undiminished severity.

The urine was examined every morning whenever it was possible to collect it, and it was with very few exceptions found to present an increase of the urea during the pyrexial period and a diminution afterwards; the chlorides, on the other hand, were decidedly diminished, both during the height of the fever and later. This deficiency of the chlorides is partly explained by diminished ingestion, but not entirely so, as large quantities have been administered without producing a corresponding increase in the urine. The watery part of the urinary secretion is almost invariably diminished.

XVIII. *On the Inoculation of Animals, as a Means of Diagnosis in Tubercular Phthisis*,[1] by WILLIAM MARCET, M.D., etc.—The experiments of Dr. Villemin tend to prove that tubercular phthisis can be inoculated from man to animals, and the object of the present paper is to show that tubercular phthisis may be caused in some of the lower animals by the inoculation of the sputa of consumptives. Eighteen Guinea pigs were inoculated—eleven with the expectorations from cases of undoubted phthisis; two with the expectorations from doubtful cases; one with the blood of a tubercular dead human body; one with the blood of the animal used in the preceding experiment, ten days after the operation; two with pus taken from the chest in a case of empyema; and the remaining one with the sputa from a case of bronchitis. Of the eleven inoculated with the sputa from cases of phthisis, one died three days after the inoculation, obviously from some cause independent of the operation; six died and four were killed some time after the inoculation, and in every instance tubercles were found. In the animals inoculated with the blood of a dead tubercular human body, and with pus from a case of empyema, tubercles were found. In the remaining animals there was no evidence of tubercular deposit.

In order that the objection might not be raised that the tubercular deposits were due to other causes, Dr. Marcet subjected four Guinea-pigs to precisely the same influences as those experimented with, keeping them in same hatch, and feeding them with the same food. After two months three were killed, and were found free from tubercle, and the fourth was still living, apparently healthy, at the time of the reading of the paper.

The method of inoculation is simple, and is thus described: "The sputa being collected in a capsule, a thread, passed through a needle, was thoroughly stirred about with the contents of the capsule, so as to become well impregnated with them. A small incision was then made in the skin of the animal, and the needle introduced right through the wound and under the skin, to be brought out a small distance—say a quarter of an inch—from the incision; by means of slight pressure, with the finger, on the thread while being drawn out under the skin, the matter it contained was pressed out into the subcutaneous tissue, where it remained."

The experiments seemed to have been carefully performed, and all sources of error excluded. We should, therefore, be glad to hear of them being repeated, for if the same result is obtained by other experimenters, a valuable addition will be made to our means of diagnosis in doubtful cases. Even the most expert auscultator is sometimes at fault in some cases of phthisis, and a positive result from inoculation would certainly at once disperse his doubts.

XXI. *On a Case of Muscular Atrophy, with Disease of the Spinal Cord and Medulla Oblongata*, by J. LOCKHART CLARKE, F.R.S., and J. HUGHLINGS JACKSON, M.D., etc.—This is a report of a case of muscular atrophy, apparently taking its origin from a fall upon the right hand by which the thumb was much injured. The disease lasted for a little over two years; the autopsy showed that the principal changes had taken place in the medulla oblongata and spinal cord, and consisted of atrophy and softening in different parts.

XXIV. *Report of the Scientific Committee appointed to Investigate the Physiological and Therapeutical Effects of the Hypodermic Method of Injection.*—An abstract of this paper has already appeared in the October number of this journal for 1867. J. H. H.

[1] Gazette Hebdomadaire for December, 1865, and November and December, 1866.

ART. XIX.—*Transactions of the Epidemiological Society of London.* Vol. II. Part II. Sessions 1864–5, and 1865–6. 8vo. pp. 280. London, 1867.

THE object of the Epidemiological Society of London is the study of epidemic and endemic diseases, with especial reference to the investigation of the various external agencies, and the different conditions of life which favour their development or influence their character, and the sanitary and hygienic measures best fitted to check, mitigate, or prevent them. There will be found in each volume of its *Transactions* a record of valuable facts, bearing directly upon one or other of these subjects, either in confirmation, development, or rectification of opinions heretofore entertained, or to form the basis of correct views of the etiology, and the means for the amelioration and prophylaxis of disease whether of an endemic or epidemic character, the causation and consequently the prevention of which are as yet involved in obscurity. Many of the facts recorded in the publications of the Society, in their isolated form and limited range, have, of themselves, but little practical value; but when collated with other observations bearing upon the same questions, collected in other localities, or in the same localities during different occurrences of the same or similar diseases, they become invaluable as the means by which alone certain important truths, bearing upon the production of disease, can be satisfactorily determined. Of this character are the majority of the observations embraced in the leading papers which compose the volume before us.

The first paper is devoted to the notice of "a case of presumed Delhi boil," by F. J. Burge. The general characters of disease presented in the case described, were, we are told, more allied to the eruptive disease known to the English and American physicians as rupia, than to any other. Apparently a somewhat kindred malady, known as the "Aleppo evil," prevails in the valleys of the Tigris and Euphrates, to which locations it is confined. It is said to occur only once in the same individual. Both maladies, however, are referred to similar exciting causes. The general condition of the parents and child, in the case described; the non-existence of throat affection in either; the absence of any purple hue of the parts affected, argue against a syphilitic taint. The purulent and non-vesicular character of the eruption, with the concomitant circumstances, and the refractory nature of the complaint, tend to separate it from rupia. Its communication by contagion is doubtful. It is reported that the occurrence of measles is prophylactic of the disease.

The next paper is on "the prevalence, distribution, and limitation of scarlet fever in England," by J. N. Radcliffe, though highly interesting in all its details, will not admit of any satisfactory analysis adapted to our limits.

Then follows a paper by Dr. Babington, "on the limitation of *Venereal diseases* among the civil population. It is marked throughout by good sense, but suggests no preventive measure that would be tolerated or could be carried out successfully in any portion of the United States.

We have next a communication from Dr. Smart, R. N., in respect to *Diphtheria*, as it has occurred in Bermuda. It presents no new facts in respect to the causation and general pathology of the disease.

Dr. R. Lawson presents a short notice of "*Epidemics* in the Colonies of Cape of Good Hope and Natal, in 1862–63." Of the epidemics scarcely more than a mere list is given. We are informed that beyond the Tugela, in 1862, a fever prevailed during the early part of the year, which the traders described as very fatal. Death was very frequently preceded by "yellowness of surface and black vomit." During the same season a similar disease prevailed at Klerkdorp, in lat. 26½ S., long. 37½ E., about three hundred miles from the sea. It commenced in January, and carried off fourteen or fifteen persons out of a very small population. In 1859 three such cases were observed in soldiers at King William's Town, in the south of Africa. They proved quickly fatal. The medical officers who treated the cases considered that they bore the characteristics of yellow fever.

The subject of "*Vaccination* in Tasmania," is treated of by Dr. E. S. Hall. His remarks have little interest beyond what is merely local to the island indicated.

J. N. Radcliffe describes "recent additions to our knowledge of *Epidemics in England*, during the sixteenth and seventeenth centuries." A very interesting medico-historical paper. A similar remark may be made also in reference to the succeeding paper by Dr. J. Stark, presenting "Remarks on the *Epidemic Fever* of Scotland, during 1863–64–65, and on the epidemics of fever which have prevailed in Scotland during the past century and a quarter."

Dr. Stark remarks, that in all previous epidemics of which we have accurate records, more than one type of fever has prevailed; the present epidemic in Scotland presenting no exception to this general law. While pure spotted typhus and enteric fever have constituted the majority of the cases, instances of relapsing fever, of simple continued fever, of gastric fever, and of febricula, were not few. But it is useless to speak of types of fever unless we distinctly understand one another as to the names and definitions we assign to each form. The names and definitions adopted by Dr. Stark are as follows:—

1. *Typhus fever* (spotted fever, low, putrid, brain or nervous fever). A continued fever, characterized by great prostration, the early appearance on the skin of a malberry or measly rash (*but not in successive crops*), generally remaining visible during the course of the disease. Bowels generally confined.

2. *Enteric fever* (typhoid, gastro-enteric, and gastric-fever, dothinenteritis). A continued fever, with rose-coloured spots, appearing chiefly on the trunk of the body, about the end of the first week, *in successive crops*, each continuing for about three or four days. Bowels generally loose, abdominal pain, enlargement and ulceration of the aggregated glands of the ileum usually met with on dissection.

3. *Relapsing fever* (relapsing or short typhus, bilious typhoid fever, typhinia, synocha). A continued fever of various but short duration; in general absence of eruption; intermission of all the symptoms, and an apparent return to health for a longer or shorter period, the fever relapsing after from five to eight days or more; there being often more than one relapse in the course of the disease. Skin often dark, or more or less yellow. A strong tendency to enlargement of the liver and spleen.

4. *Gastric fever* (bilious fever). A continued fever without eruption, attended by gastric and bilious derangement. Skin often more or less yellow.

5. *Simple continued fever* (simple typhus, simple fever). A continued fever without eruption, and with no tendency to relapse.

6. *Febricula;* a simple fever without eruption, and, at the most, only from two to four days' continuance.

7. *Infantile fever* (infantile remittent fever). Fever occurring in childhood, with daily exacerbations and remissions, and a tendency to diarrhœa. Cases of enteritis, and of continued fever in some of its forms, are often mistaken for this fever—if, indeed, it be anything else than a form of enteritis.

"It is a great mistake," Dr. S. remarks, "to suppose that either of the above forms of fever are new forms, or of recent origin, as if the old well-known spotted typhus had been gradually giving way to these other forms, or was changing its type, as is the favourite theory with some. In almost every epidemic of which we have particular accounts left us, it would seem that nearly every one of the now recognized leading types of fever have co-existed, and that these several forms of types recur in the epidemics of to-day as unchanged as they were a century and a half ago." "Modern nosologists incline to regard each form of fever as a distinct species." This Dr. S. regards as a mistake. To him they appear to be only distinct varieties. "In every epidemic numerous cases occur which it is quite impossible to refer with certainty to any of the forms, as they seem to partake of the character of more than one, and sometimes actually pass from the one to the other."

From the facts adduced in the paper before us, it would appear that in every epidemic of fever, nearly all the varieties of fever occur; but, at the same time, that every particular epidemic has its own special characteristics, because of the predominance of one or other form of fever.

"A very remarkable fact has been observed in Scotland, and that is, that the same type of fever does not prevail in each locality; while one form seems to take the lead in one locality, another and very different form seems to take the lead in another. This fact deserves special notice, inasmuch as it would seem to prove that, if we admit that epidemics of fever are chiefly owing to general—say atmospheric—causes, we must also allow that local causes have a strongly modifying influence, causing the fever to assume a type in one place different from that in another."

Facts would seem to bestow considerable probability upon a suggestion of Dr. S., namely, that the form of fever which furnishes only a *small* proportion of the cases in any epidemic of fever, ranks very high in mortality.

Dr. Smart presents a very excellent and highly instructive paper "On Scarlatina Rheumatica, vel Arthritica (*Copeland*): *Breakbone Fever*, or *Dengue*."

There occurs within the epidemic range of yellow fever, a febrile affection, known as breakbone fever or dengue. Its characteristics are severity of accession, a combination of skin eruption with rheumatic pains, and favourableness of result. It has been known to accompany yellow fever in epidemic seasons, holding then a somewhat analogous relation to it as that which diarrhœa holds to cholera in epidemics of the latter. There are grounds for suspicion that a ship, possessing bad hygienic conditions, brought within an epidemic of dengue, may have genuine yellow fever developed on board her.

Basing his account of dengue upon the study of its recent occurrences in the island of Bermuda, Dr. S. sketches its symptomatology; of this we present the following sketch:—

Incubative stage.—Uncertain. Often indisposition of a few days preceded by rigor or chills, frequently attended by disorder of chylopoietic viscera. In quite as many instances the attack was sudden, and at once violent.

Invasion.—Rarely attended with rigors save in very sudden attacks. The febrile stage was usually preceded by chills and a sense of creeping through the back and limbs, followed by prostration and a sense of danger, amounting, sometimes, to apathy. In two children, aged about 10 years, the fever was ushered in by epileptiform convulsions.

Heat stage.—Intense frontal and orbital pain; a feeling as if the eyes were being forced from their sockets; severe pains in back and limbs; restlessness; secretions generally inactive; eyes reddened and dry; face, neck, and trunk of a scarlatinous, sometimes rubeoloid hue; temperature much increased; diminution of external sensibility. Pulse excited in frequency, usually labouring in force. In cases of sudden onset tongue unaffected, but thickly coated, often yellow, where there had been premonitory indisposition.

This stage lasted, in different cases, from six to thirty-six hours, and then remitted, "by perspiration, in a drowsy sleep." In, perhaps, the majority of patients, milder febrile reactions and remissions continued still to continue for a couple of days, during which disappeared, first the headache, then the spinal pains, and lastly those of the limbs. About the fourth day convalescence commenced with free spontaneous stools, and restored kidney secretion: after a few days strength was restored, and the ordinary state attained.

The eruption was usually bright red, with raised papillæ of skin, the redness disappearing under pressure and returning when this was removed. In the milder cases the skin was of a duskier hue, fading on pressure and disappearing during convalescence. Sudamina often appeared about the neck and trunk during the sweating crisis. "It was evident throughout the epidemic, that with a vivid rash in the first stage, there was protection from second attacks."

"The fallen pulse, increasing in frequency on rising from the recumbent to the erect position, on which change syncope occurs at times, was a constant phenomenon, although less strongly marked, and of shorter continuance in some cases than in others. In the severer form of the fever, the irregular fever reactions of the stage of subsidence continued until the seventh day, when a well-marked metaposis occurred, followed by the series of symptoms which distinguish this epidemic disease."

Previously to that change, in the severest form, the phenomena already described were more marked. While on the face the eruption was continuous,

like scarlatina, on the chest it was patchy, like rubeola. The yellow-coated, red-edged tongue, the diarrhœa, and general soreness of abdomen, indicated disorder of the liver and digestive mucous tract. Hemorrhagic effort towards the surface was indicated by epistaxis and turgescence of the mouth lining.

After the seventh day change, the eruption became universally rubeoloid over body and limbs; no fever heat; hemorrhagic effort quickly disappeared; for several days the circulation increased constantly in strength; the headache suddenly ceased, while the dorsal and limb pains lingered. This was but a prolongation of the stage of subsidence, during which the tongue continued coated, showing a morbid condition of the gastro-hepatic functions. As the loaded state of the tongue, after a partial disappearance of it in the sweating stage, in several instances returned, it was inferred that there existed depraved secretions from the stomach and its collateral viscera, resulting from the congested statis of blood in them, of which there were so many simultaneous indications externally. Other organs besides the liver were liable to engorgement. More rarely the respiratory mucous track displayed symptoms of passive engorgement; hæmoptysis occurred in one case.

Dengue has no regular sequelæ, which fact diagnoses it from rheumatism and from the proper eruptive fever.

For the little that is known in relation to the pathological anatomy of dengue, of its probable etiology, and of its relation to yellow fever, we must refer to the paper of Dr. S. We cannot command the space which an analysis of those portions of it would require.

"On the outbreak of *Epidemic Cerebro-spinal meningitis* in the province of Dantzic in 1865," is an interesting communication from Professor Hirsch, of Berlin. Though the well recorded facts embraced in it add but little to our knowledge of the disease to which they refer, they are nevertheless valuable if only to confirm our own observations in respect to the causes, character, course, and treatment of a formidable and often very acute disease. We concur with Dr. H. in his remarks upon the value of narcotics in the treatment of the disease under consideration.

Dr. W. D. Moore communicates a paper on "the *State of Disease in Sweden* during the years 1862-1863." The prevailing diseases were measles, diphtheria, and smallpox. Dysentery and ague were prevalent to only a slight extent.

Dr. F. J. Brown describes "an Epidemic of *Cerebro-spinal meningitis* at Rochester, with introductory remarks on other epidemics that preceded it. These latter were relapsing typhus fever, August, 1864, accompanied with and followed by severe aphthous affections of the mouth, throat, anus or vulva. Hooping-cough, December, 1864; acute colitis, June, 1865, three cases; idiopathic tetanus, March and July, 1865, two cases.

Cerebro-spinal disorder appeared in Rochester under two forms: 1. *Cerebro-spinal neuro-myalgia*, and 2. *Cerebro-spinal meningitis.*

"The neuro-myalgia," says Dr. B., "has presented two varieties differing in degree of severity, viz: (*a*) Cases marked principally by the occurrence of vertigo and nuchal stiffness; (*b*) Cases manifesting severe pains, generally throughout the body and extremities, and accompanied by vomiting, in addition to nuchal pains and stiffness, and a few head symptoms."

On the subject of cerebro-spinal meningitis the paper presents nothing absolutely new.

An abstract is given of a paper by Dr. A. H. Howe, "on the *Laws of Pestilence.*"

The abstract comprises twenty-two propositions, many of which are not altogether destitute of a probable truthfulness. As a series of laws explanatory of the appearance, source, progress, and spread of epidemics, they are at best but hypothetical, though, we admit, highly plausible. To understand correctly the views of the author, the entire abstract as given in the *Transactions* must be carefully studied.

Dr. H. Weber presents a review of "Professor Pettinkofer's theory of the *mode of propagation of cholera.*" The theory has of late years obtained the assent of many distinguished authorities. It assumes that "the two essential

conditions for the propagation of cholera, and for the occurrence of epidemics of the disease, are human intercourse, and a certain nature of the locality; or, in other words, the excretions of cholera patients to give the germ, and a soil for its development." The details of this theory are no doubt familiar to our readers as they were published in the *Medical News* for March, 1866, p. 40 *et seq.*, and we need not therefore dwell further on the subject.

An account of the "*Epidemic Varioloid Varicella* in Jamaica" is given by Dr. J. Anderson. It is of a strictly local character. It has some bearing, however, upon the question as to the relation, if any, which exists between varicella and the varioloid disease.

H. Hadlow, Acting Surgeon, gives an account of "an outbreak of *Dysentery* in H. M. Ship Conqueror," in the summer of 1864. It presents no points of especial interest.

The next paper is on "the theory and mode of *Propagation of Cholera*, by Dr. B. W. Richardson.

The views of Dr. R., on the cause and propagation of cholera, need not be presented, as they were laid before our readers in the No. of the *Medical News* for Sept. 1866, p. 156 *et seq.*

A very instructive paper is presented by Dr. W. Dickson, R. N., "on *Scurvy in the mercantile marine.*" It adds, however, but little to our present knowledge of the cause and prevention of scurvy on shipboard.

In the next paper Dr. J. B. Sanderson treats of "*the Cattle plague* in its epidemiological aspects." This paper will be read with interest and profit by all who are interested in the investigation of the cause and propagation of the cattle plague with a view to the establishment of a true basis for prophylaxis.

Besides the papers we have noticed, the volume before us contains three presidential addresses, and a very neat biographical sketch of the late Dr. Benjamin G. Babington.

The appendices are made up of the Report of the Smallpox and Vaccination Committee (April, 1864). Report on the Questions submitted by Dr. Farr to the Council, concerning the Classification of Diseases (Feb. 1865). Report of the Council on Cholera Hospitals (July, 1866). Memorials concerning Cholera to the Privy Council, etc. (September, 1865). D. F. C.

ART. XX.—*Report on Leprosy by the Royal College of Physicians. Prepared for Her Majesty's Secretary of State for the Colonies. With an Appendix.* 4to. pp. 244. London: 1867.

THIS highly interesting report is based upon the replies made by competent persons, in the British Colonies of the West Indies and elsewhere, to queries propounded by the College at the request of the Colonial Secretary. The queries were seventeen in number. The leading points to which they have reference will be understood by the following abstract of the conclusions on the subject-matter of each, drawn up by a committee of the College from an examination of the entire evidence comprised in the answers received.

1. The distinctive characters of leprosy are the same in all parts of the world where the disease has appeared. They are certain forms of cutaneous eruption and discoloration, with a tendency to ulceration or to death of the affected parts, with disorders of innervation, more particularly the impairment or loss of sensibility.

There are described two forms of the disease, the *tuberculated* and the *anæsthetic*. The loss of sensibility is not confined to the second form, but in it the anæsthesia generally occurs earlier, and is more marked, than in the first. As the two forms not unfrequently coexist, or succeed one another in the same patient, they must be regarded as merely modifications of one morbid condition.

As varieties of non-tuberculated leprosy are included cases sometimes designated as *leucopathic*—characterized by white spots or blotches on the skin, which are more or less decidedly anæsthetic; also cases in which the eruption

is in circular or annular spots, similar to that of *lepra vulgaris*, but in which the centre of the spots is anæsthetic, while other distinctive marks of leprosy are present. The term "leprous" is often applied to various chronic maladies of the skin occurring in unhealthy persons, who are badly nourished, and neglectful of cleanliness, but which cannot be regarded as true leprosy. Elephantoid enlargement of the lower extremities is, in some places, considered as allied to leprosy. The two diseases would appear to have, however, no real affinity with each other, although both are sometimes endemic in the same countries, and occasionally coexist in the same patient.

2. The development of leprosy appears to take place most frequently about puberty, and from that period of life to maturity; but it has been observed in infancy and early childhood, and to fifty years and upwards. Rarely have signs of it been seen in the children of lepers at or soon after birth. The tuberculated form is said to generally manifest itself somewhat more early in life than the non-tuberculated.

Arrest of development, and various forms of congenital deformity, are said to be the occasional results of a hereditary tendency to leprosy.

The external symptoms of leprosy are often preceded by a sense of malaise—recurrent, ague-like chills, occasional feverishness, a sense of internal heat; pains, or creeping, pricking sensations, or formication and itching of the limbs; numbness of a hand or foot, or in one or more of the fingers or toes; general weakness and depression of both mind and body. In certain cases, especially of the non-tuberculated form, there is in the early stage an intense burning sensation, and a painful tingling along the course of one or more of the nerves of a limb, increased by pinching the skin or tapping over the affected part. It is sometimes accompanied by a dry, fissured state of the skin, falling off of the hair, and shrivelling of the nails.

Before the appearance of the characteristic cutaneous tubera or nodules of the tuberculated form, there not unfrequently occurs an erythematous redness, most generally of the face, attended with a feeling of heat or burning—a puffiness of the features, and increased sensibility of the skin, which latter symptom is invariably replaced, sooner or later, by anæsthesia of the affected parts. Excessive perspiration of the hands, when present, is an evidence of the leprous diathesis, if not of the actual disease.

3. Taking the disease as a whole, when not extensive, it may continue for twenty years or more; but from five to fifteen years may be set down as its most usual duration. The non-tuberculated form is most usually the slowest in its progress. In both forms, however, it may remain stationary for years, life being occasionally prolonged to old age. Death is generally the result of some intercurrent disease; in malarial districts, especially of intermittent or remittent fever. In some cases the patient sinks from general marasmus and atrophy. Children of leprous persons are observed to be less amenable to medical treatment than the children of other parents when sick, of the same age and condition.

4. It has been supposed that leprosy occurs most frequently in males. In some leper asylums in the West Indies the number of the two sexes received is about equal; while several observers are of opinion that the disease is equally common among females as among males; a few, again, state that it is most common among the former.

5. In hot climates leprosy appears to be much more frequent among the dark than among the white population. Most of the cases among the latter occur, it is said, in such as are born in the country, or have long resided in districts where the disease is endemic.

6. In all countries the disease prevails chiefly among the most debased and poorest of the people; the better conditioned classes are, however, not exempt from it.

Leprosy appears to prevail chiefly in low malarial districts, especially on or near the sea-shore; but it is by no means confined to such localities. Lepers are more frequently to be met with in towns than in rural districts. The dwellings of the classes amid which leprosy is most prevalent, are everywhere of a character the most miserable, filthy, and unwholesome. The personal uncleanness of lepers is on a par with that of their abodes. Their food is very generally

poor, unnutritious, and otherwise unwholesome—badly cooked, also, and often quite insufficient in quantity.

7. All observers agree that an unwholesome and insufficient diet, exposure to atmospheric vicissitudes without sufficient clothing—residence in foul, damp dwellings, improper diet, and the want of personal cleanliness, serve to aggravate the disease and accelerate its progress; while, on the other hand, it is greatly retarded and mitigated by more favourable hygienic conditions. Intemperance, sexual excesses, the depressing passions—in short, whatever tends to lower the vital energies, and to impoverish or deteriorate the blood, are always hurtful. Among other circumstances said to aggravate the disease, is included the incautious use of mercury, which has often been employed in its treatment.

8. It is almost universally conceded, that leprosy is often hereditary; it nevertheless frequently occurs in those in whom no hereditary tendency can be traced. The disease is stated not unfrequently to pass over one generation, and to reappear in the next.

9. Leprosy is very generally considered to be a disease *sui generis*, quite independent of, and unconnected with any other disease. The facts given in support of this position are seemingly conclusive.

10. The all but unanimous conviction of the most experienced observers in different parts of the world is in direct opposition to the belief that leprosy is contagious or communicable by the closest proximity or contact with the diseased.

11. Of course, seggregation of the leprous is not necessary to prevent the spread of the disease. Properly constructed and located asylums, however, in which lepers could be received and placed under favourable hygienic conditions, will be probably the only certain means for effecting their cure.

12. The public provision for the cure and treatment of the leprous poor, where the disease prevails, is almost invariably scanty and insufficient.

13. As to the number of leprous persons maintained at public expense, no positive information has been received. The statements given are too few and imperfect to afford any criterion of the extent to which the disease exists among the poorer classes of the several communities heard from.

14. In respect to the question whether leprosy has of late years increased or decreased in its several habitats, no accurate conclusion can be arrived at, from the want of trustworthy statistical data.

15. It is admitted on all hands that in the treatment of leprosy the best effects have been derived from the adoption of hygienic measures; that medicinal treatment is of no avail in retarding or arresting the disease, unless combined with a nourishing, unstimulating diet, suitable clothing, protection against atmospherical vicissitudes, personal cleanliness, and exercise in the open air.

The medicines which have been found most useful are tonics and alteratives; of these, the preparations of iron and of iodine are the best. Arsenic, recommended by some, is of more doubtful utility. The oil of the *chaulmoogra* and cod-liver oil are said to have been given with advantage—as also sarsaparilla, mudar (*calotropis*), and other reputed vegetable alterants. Mercury is of very doubtful propriety.

The systematic use of baths—simple, saline, or sulphuretted, appear to be decidedly beneficial. Counter-irritation over the spine by the actual cautery has proved useful, it is said, in diminishing the anæsthetic symptoms.

The evidence is all but unanimous that leprosy very rarely, if ever, manifests any tendency to a spontaneous cure. When fully developed, a complete recovery is not to be looked for.

16. This query relates to the census of the West India Islands subject to the occurrence of leprosy. The answers given to it are far, however, from being complete or satisfactory.

17. The reports of post-mortem examinations made by Dr. Carter of Bombay, of leprous patients, are of considerable interest. They tend to confirm the general accuracy of the researches of Drs. Danielssen and Boeck in respect to the morbid anatomy of the disease. These gentlemen were the first to investigate this field of pathological inquiry. The following is a brief summary of the

principal morbid changes which they detected in the numerous dissections of leprous patients made by them in the hospital at Bergen.

Tubercular form.—In the developed stage, the cutis vera of affected parts tumefied and thickened. When squeezed between the fingers a yellowish white, viscid or gristly fluid exudes. Subcutaneous cellular tissue, infiltrated with a gelatinous or lardaceous effusion, firmly adherent to corion. Subcutaneous veins and nerves thickened and enlarged from the same effusion on their outer surface. In the advanced stage both the deep-seated and superficial nerves, especially in the neighbourhood of ulcerations, very much thickened and enlarged, in consequence of inflammation of their sheaths. Mucous membrane of nares, fauces, and larynx swollen, occupied with tubercles, soft, yellowish in colour, and often ulcerated. The opening of larynx frequently the seat of morbid deposit, nearly closing up, sometimes, the *rima glottidis*. Tubercles occasionally occur on mucous lining of trachea and larger bronchi. Cervical glands, in some cases, much enlarged. Substance of lungs seldom altered; pleura often much thickened from tuberculous deposits in its cellular tissue. A similar condition may occur in the subperitoneal cellular tissue. On the inner surface of intestines, isolated, rounded ulcers are occasionally present. Mesenteric glands generally more or less enlarged. Liver sometimes the seat of tubercles. In the advanced stage of the disease kidneys almost always more or less seriously affected, usually with the results of albuminous nephritis present. Within the cerebral and spinal cavities no distinct or uniform morbid changes are detected.

Asthenic form.—When completely developed, with decided paralysis of muscles and skin, the latter is often much attenuated—all the fatty matter gone. Substance of muscles atrophied; cellular tissue surrounding seat of ulceration or necrosis, infiltrated with a serous or lardaceous deposit. The nerves traversing the infiltrated tissue, and those deeper seated excessively swollen, their sheaths filled with a firm albuminous matter in which the ultimate nervous filaments are imbedded; alterations precisely the same as those found in the tuberculous form of the disease, and supposed to be the result of inflammation of the nerves. The axillary and inguinal glands are, at the same time, often much enlarged. The lesions of the nervous centres, which are present in most cases, are chiefly congestion of the posterior or dorsal veins of spinal marrow, effusion of an albuminous serum within arachnoid membrane and the dura mater; adhesion of arachnoid membrane to pia mater; consolidation or hardening of substance of spinal cord at part affected. Cord usually somewhat contracted in size; so atrophied, sometimes, as not to be larger in diameter than a quill. The cineritious substance has acquired a dirty yellow colour, resembling a good deal the medullary substance. The roots of the nerves within the spinal canal invested with albuminous exudation. Sometimes the axillary and ischiatic plexuses, and the principal nerves issuing from them, are visibly atrophied. The above changes are always most conspicuous in the cervical and lumbar portions of the cord. Within the cranial cavity the same changes occur as in the spinal, but in a far less decided or advanced degree. Whenever well-marked facial anæsthesia has been present, the Casserian ganglion has been found the seat of some change. The most marked morbid change in the condition of the blood of leprous patients is an excessive amount of albumen and fibrin. The same sanguineous dyscrasia is found in both forms of leprous disease, the tuberculous and anæsthetic.

D. F. C.

ART. XXI.—*On the Physiological Action of the Calabar Bean (Physostigma Venenosum, Balfour).* By THOMAS R. FRASER, M. D., Assistant to the Professor of Materia Medica in the University of Edinburgh. From the Transactions of the Royal Society of Edinburgh. Vol. XXIV. Quarto. pp. 73. Edinburgh, 1867.

THE Calabar Bean, though known as a judicial poison of the negroes of the west coast of Africa, did not attract attention on the part of the medical pub-

lic until the discovery of its power of contracting the pupil of the eye. In 1855 Dr. Christison, in a paper published in the proceedings of the Royal Society of Edinburgh, directed the attention of physiologists to some of its remarkable properties. Since then it has been experimented with by ophthalmic surgeons, and numerous notices will be met with in the journals. The last edition of the *British Pharmacopœia*, recently published, contains this substance in the list of officinal articles of the Materia Medica.

The paper now under consideration contains the results of Dr. Fraser's experiments to determine the mode of operating upon the animal system possessed by this remarkably energetic poison. In presenting this account of his investigations, the author does not conceive that they are exhaustive, and states that "the effects which follow the topical application to the eyeball will be merely alluded to in this paper, as this portion of the subject has not been completed. Enough has, however, been done to convince me of the insufficiency of the views hitherto advanced, and to suggest the advisability of extending my observations."

In 1863, Dr. Fraser obtained from the kernel and the spermoderm of the bean a peculiar principle, having the peculiarities of an alkaloid, and with it a crystalline acid resembling tartaric. To the principle he gave the name of *Eserinia*, derived from the word *Eserĕ*, by which the bean is known in Calabar. In his experiments, the alcoholic extract was employed. As this extract contains some oil, and as it is also hygroscopic, in conducting the experiments, the quantity was definitely weighed from such as was kept in an exsiccator. The experiments were made upon frogs, birds, and animals, and it was "found that fatal results were produced with the smallest quantity on birds; and that the largest doses in proportion to weight, were required by amphibia." A dose of $\frac{1}{16}$ of a grain proved rapidly fatal to a pigeon, while a frog bore three grains of the extract and recovered. In his previous paper of 1863, published in the *Edinburgh Medical Journal*, Dr. Fraser showed that the more rapid the absorption of the poison, the more quickly are its fatal effects produced, and that the active principle may be absorbed by any living tissue. From digestion in the gastric juice there does not appear to be a loss of effect in the active principle of this bean; thus, after having been digested for twenty-four hours in the gastric juice of the dog and purified, it produced contraction of the pupil, when applied to the conjunctiva. There is another fact presented in connection with the stomach which is interesting. When injected into the jugular vein of a dog to the extent of five grains and the stomach immediately removed after death, the contents, with the scrapings of the mucous coat, were properly treated and reduced to the state of extract. A minute portion of this produced contraction of the pupil. This is in accordance with the statements of Dr. Brinton and Dr. Taylor with respect to the excretion of poisonous substances.

The following phenomena are presented when poisonous doses of physostigma are given to mammals: "When a small fatal dose is administered to one of the lower animals, a train of symptoms is produced usually in the following order: A slight tremour is first seen, especially at the posterior regions, and this extends forwards to the anterior extremities and to the head. The limbs yield immediately afterwards, the posterior becoming generally first paralyzed, and the animal lies extended in a state of almost complete muscular flaccidity. A few attempts may be made to recover the normal position, but they are usually ineffectual. The bowels in most cases are evacuated and urine is passed. The pupils generally *contract;* as the symptoms advance, the respiration becomes slow and irregular, with a distinct stertor accompanying both inspiration and expiration, and frothy mucus escapes from the mouth. Muscular twitches occur and often continue after respiration has ceased. Reflex action cannot be produced by either pinching or pricking the skin. By and bye the eyelids do not contract when touched or even when the eyeball is pushed. On lifting by the ears, the limbs hang quietly, and the only sign of life is an occasional gasping inspiration, which also soon ceases, and the animal appears dead."

Consciousness is preserved during the whole time, until the power of expression is lost. During incomplete paralysis, proofs of sensation may be obtained

by pinching the ears or pricking the skin. Immediately after death the pupils dilate.

On opening the body, the various muscles which are cut contract. The diaphragm and muscles of the extremities may be excited to action by pinching the phrenic and sciatic nerves, and the contractility of the muscles generally is retained for some time after death. The heart is found acting regularly and the intestines exhibit vermicular action. The heart may continue its action for one hour and a half after death. Its chambers usually cease to contract in a definite order, the left auricle first losing its spontaneous action, then the right and left ventricles, and after an interval the right auricle. The large veins in the thorax are found distended. The lungs are engorged—in two experiments this proceeded to such an extent that detached portions sunk in water.

When a large fatal dose of the kernel is administered, the hind limbs almost immediately yield and the animal falls. It lies flaccid and in any position on the table, and exhibits muscular power only by a few twitches. The pupils contract; in a few cases fluid escapes from the nostrils and mouth, and the lachrymal secretion is increased. Reflex action cannot be produced by irritation, and the respiration, after a few gasps, ceases.

The pupils dilate immediately after death. On opening the body, muscular twitches occur. The heart is found distended and passive; irritation, however, produces contraction for about ten minutes after death. The vermicular action of the intestines is very much diminished, and can scarcely be observed.

The mesenteric arteries and veins may be readily distinguished by the colour of their contents.

Phenomena similar to the above were observed in the cold-blooded animals, as frogs.

From the exposition given of the effects of the physostigma, the evidence is presented that it is a decided paralyzer, and it becomes an interesting inquiry wherein consists its especial potency, or on what structures is its force expended. The several points involved in this investigation are taken up separately by the author, and—

1st. *The Action on the Voluntary Muscles.*—"A full-grown rabbit had injected into the subcutaneous tissues of its flank three grains of extract in water. Tremours occurred in two minutes, the anterior members soon yielded, and in four minutes and thirty seconds the animal fell, the muscular trembling having increased in vigour, and having become general over the body. Respiration ceased in five minutes after the injection, but muscular tremours continued during other three minutes. When the thorax was opened, the heart was found dilated and passive. In twenty-four minutes galvanic stimulation of the sciatic nerves caused powerful muscular contractions; within thirty-six minutes, these nerves were completely paralyzed, though application to the voluntary muscles of the electropodes produced marked contractions. Though weaker and weaker, these contractions continued for an hour and thirteen minutes after the administration of the poison. The general result with warm-blooded animals was the same; muscular contractility remained after the destruction of the function of motor nerves; and this also occurred with the frog." The experiment proved the absence of any paralyzing effect through the blood or striped muscles.

Rigor mortis is delayed for an unusual period after apparent death in cold-blooded animals, and in mammals and birds is not hastened. In both classes this change in the condition of the muscles is only indirectly affected by this substance and through the influence on the cardiac contractions. When the blood supply of the muscles is stopped their function is suspended and rigidity follows, but the resulting rigor does not seem to be due in any other than this indirect method to the action of physostigma. The above statement is shown by the following experiment: "The right iliac artery of a frog was tied, the poison was then introduced into the skin of the shoulder. In a few minutes general paralysis existed, and the skin of the tied limb was paler. In an hour and twenty minutes, the sciatic nerves being exposed, it was found that the left was completely paralyzed, while galvanism applied to the right nerve, or that of the protected limb, produced active muscular contractions. The muscles of the tied limb were pale as contrasted with those to which the poison had access, and

the latter were distinctly blue in colour. The non-poisoned muscles continued active until forty hours, and at forty-nine hours they were acid and stiff and did not contract when galvanized. In the poisoned parts the functions of the motor nerves were destroyed in three hours and ten minutes, the non-poisoned or right sciatic continued active until thirty-two hours. It was possible to distinguish the heart's impulse on the thoracic walls and to determine the frequency of its contractions, and at the end of three days fifteen feeble beats per minute were occurring. The circulation was maintained for eighty hours as demonstrated by the microscope." During all this period the muscles were everywhere, except in the tied limb, flaccid, blue, and of alkaline reaction and contracted, though latterly with diminished vigour, when galvanized; those of the tied limb were now putrefying. In one hundred hours the poisoned muscles had lost much of their blue colour and contracted slowly and partially. In one hundred and twenty hours they were slightly stiff, and galvanism produced merely a slow surface depression at each electrode. Such contraction could still be obtained more than five days after the injection of the Calabar. A similar dimpling could be produced on the heart long after it had lost its power of spontaneous contraction.

From his experiments, the author's conclusion is in opposition to that of Mr. Nunneley, that the poison produces paralysis of the striped muscles, for it appears that ideo-muscular irritability is the last vital property to disappear in death by Calabar bean. Its loss is only caused indirectly, as this is due to the cessation of blood supply which is necessary for its manifestation.

In the experiments with mammals and birds an early and constant symptom was the occurrence of successive muscular contractions of a non-coördinate character. This varied in accordance with the rapid or slow introduction of the substance; in some cases it was so strong that the animal appeared as if under the action of a tetanic. The twitches became more marked when the poisonous effects were fully developed; they gradually diminished in strength as death approached, and continued in a slight form for many minutes after it. Exposure of muscles to the air and irritation with a knife, during autopsy, increased the strength of their contractions, and even originated them in muscles and parts of muscles from which they had disappeared, and it was then observed that the whole of a muscle seldom twitched at once, but portions of it separately in succession. When a muscle was removed from the dead body these twitches were continued.

2d. *Action on the Cerebrum.*—So far as paralysis is concerned, it is not produced by any action on the cerebrum.

3d. *Action on the Motor or Efferent Nerves.*—In experiments frequently repeated, it was found that the motor nerves were not paralyzed before the respiratory movements had ceased, although it occurred that the motor nerves were paralyzed immediately after the cessation of respiration. The interval during which they remain active varies greatly in different animals and in the same animal according to the dose of the poison; in the latter case, as thought by the author, in an inverse ratio. From experiment, Dr. Fraser differs from Harley that physostigma is a respiratory poison only, and that the early production of asphyxia is caused by paralysis of the motor nerves. These nerves were directly amenable to galvanic influence, although no reflex action could be produced. The excitability of the motor nerves is, however, ultimately lost from the influence of the poison, as shown by protecting the sciatic nerve by ligature of the vessels on one side—when its conductivity was continued five hours—in a frog, longer than that of the opposite limb into which the poison had penetrated. In losing the motor conductivity, the question arises with respect to the destructive impression on the trunk of the nerve or on its "end organs (peripheral terminations). To determine this, the following experiment was performed:—

"Immediately after the left ischiatic artery and vein were tied, two grains of the extract were placed in the back of a frog. Before twenty minutes respiratory movements had ceased, while the heart was beating rhythmically at the rate of thirty beats per minute. One hour after the administration of the poison, the right (or poisoned) sciatic nerve was exposed and found active, but

in other twenty minutes strong galvanism applied to any portion of its trunk could not produce contractions in the muscles to which it was distributed, and an examination of the brachial nerves proved them also to be paralyzed. The left sciatic nerve was, however, perfectly active. When it was galvanized, movements confined to that limb were produced in the muscles below or distant from the ligatures. *These ligatures were on the thigh; but stimulation of the nerve above them, or of the lumbar nerves of the same side, was followed by energetic muscular contractions below the points of the ligature.*"

A further experiment was made by isolating the gastrocnemius muscle and cutting off its circulation, retaining its nerve connections; when it retained its power of contracting after it was lost in the other muscles of the same leg and of the animal which were not protected.

From these the conclusion is that physostigma produces paralysis of the peripheral extremities of the motor nerves, and in this respect it is in the same category of substances as curara experimented with by Bernard, and conia experimented with by Kölliker. It is remarked, however, by the author that the peculiarity of the Calabar is in the necessity of prolonged contact with the nerve terminations, and a long continued circulation of the poison-bearing blood.

While the effect of the poison is to destroy nerve excitability or conductivity at the termination of the nerves, which is retained for a long time when the poison is excluded, the effect on ideo-muscular contractility is exactly converse, that property being uninjured by the mere presence of physostigma, but diminished and destroyed by stoppage of the circulation. From the experiment to determine another point, *i. e.*, the progression of the paralysis, it cannot be concluded that the motor nerves are paralyzed by a centripetal progression of the poison.

4th. *Action on the Afferent Nerves.*—The excitability of these nerves appears not to be affected so long as the spinal cord retains its diastaltic power. Instead of their excitability being diminished, it would appear to be actually increased. Here is another point of resemblance to curara.

5th. *Action on the Spinal Cord.*—From the detail of the foregoing experiment, it is clear that the paralysis with which animals are immediately stricken on administration of Calabar bean is not due to the effect upon the brain, or the muscles, or the nerves. By this process of exclusion there is no other seat of injury to be sought for but the spinal column. The following experiment is to the point.

"A grain and a half of the extract in fifteen minims of distilled water was injected into the abdomen of a small dog. The animal sustained the paralytic shock, and in eleven minutes all respiratory movement had ceased. The spinal cord was immediately exposed, and the strongest galvanism consistent with the localization of the current, applied to various portions of its substance, failed to excite any movements of the body. A sciatic nerve was then exposed, and slight stimulation of it produced vigorous contractions of the limb, but no reflex movements. The heart continued to beat." A variation of the experiment was performed on a frog, in which the left femoral artery and vein were tied, the poison introduced into the back. No reflex action of the limbs could be produced, and yet the galvanic stimulus was manifested in both the poisoned and unpoisoned nerves. These experiments were considered decisive, "for the diastaltic function of the spinal cord was completely destroyed, while the poisoned and non-poisoned motor nerves were in so equally active a condition, that the difference between the times in which impressions travelled along two portions of the same nerve, differing in length by one inch and a half, could not be measured in either, even by a delicate instrument specially adapted for this purpose." The effect of the Calabar bean would appear to be antagonistic to that of strychnia. This was determined by experiment. For when a frog was brought into a convulsive state by strychnia, the Calabar tetanic manifestations soon disappeared, and when poisoned by Calabar the strychnia did not produce convulsions. It is the opinion of the author that no other drug so directly diminishes reflex action, and is, therefore, so likely to be employed with advantage in tetanus as physostigma. The poison is considered to be a spinal paralyzer.

6th. *Action on the Heart.*—With a large dose, the animal dies by cardiac

syncope; with a smaller one, the heart beats are only diminished in frequency, and, as the circulation continues, the spinal cord is more and more affected, until its diastaltic function is destroyed and asphyxia caused. From carefully conducted experiments with respect to the reduction of activity in the heart's movements, the following summary may be presented: "1st. Diminution never preceded by increase of the contractions, with prolongation of the period of rest; 2d. Feebleness of the contractions, with no change of colour on the occurrence of systole; 3d. Irregularity of rhythm, the auricles contracting more frequently than the ventricles, and, for intervals, contracting alone; 4th. Stoppage of all the heart's chambers. If the poison be absorbed quickly and in large quantity, the fifth and sixth effects may not occur. 5th. Renewal of contractions, either by all the chambers at once, or by one or more in the first place; 6th. Gradual recovery to a low rate of action, and continuance at this from a few minutes to several days; 7th. Stoppage in diastole of spontaneous contractions; and 8th. Loss of the idio-muscular irritability of the heart, rigor, and change of reaction from alkaline to acid." The method of affecting the heart distinguishes this poison from antiaris, tanghin, digitalis, black hellebore, and the nereum oleander, which produce first irregularity and acceleration of the heart's action, then a diminished frequency caused by protraction of the ventricular systole, and finally stoppage of the contractions by cessation of the dilatation of the ventricles, which then remain contracted, white, and perfectly empty. In producing cardiac paralysis, physostigma acts in a manner exactly the reverse. It causes no acceleration, it diminishes the frequency of the contractions by prolonging the ventricular diastole, and produces the final stoppage by cessation of the contraction of the ventricles, which themselves remain dilated, dark, and full of blood.

The mechanism of the impression resolves itself into the influences of the cerebro-spinal nervous system, whether exerted through the vagi or the spinal nerves, or the possible influences of the sympathetic system, whether exerted through the great sympathetic trunks and their branches or through the ganglia contained in the heart's substance. Any effect on idio-muscular contractility has been disproved, but it will be necessary to observe how far the impairment and cessation of respiration may explain the cardiac effects in warm-blooded animals.

The paralysis of the heart in diastole, and the diminution in the frequency of its contractions by protracted periods of rest in a dilated condition, as well as the frequent renewal of its action after a long pause in diastole, might in the first place suggest that the inhibitory function of the vagi was being exerted. To determine this the following experiment was performed. "The heart and two vagi nerves in a frog were exposed; by galvanizing either of the nerves, stoppage of the heart's action occurred in diastole. The contractions of the heart were found to be 58 per minute. The extract (3 grs.) dissolved in a few drops of water was then injected into the two thighs, in equal proportions. In 10 minutes, the heart beating 36, galvanism of the left vagus produced stoppage in diastole. In 1 hr. 5 m. galvanism produced stoppage in all the chambers. In 1 h. 50 m. galvanism of the left vagus produced stoppage of all the chambers, and the heart remained at rest in diastole for ten minutes, when a feeble auricular contraction occurred, and soon after a ventricular; galvanism of either sciatic nerve caused merely faint twitches of the toes. In 2 h. 10 m. cardiac contractions, 18 per min., feeble but rhythmical. Strong and continued galvanism of the left vagus produced no effect on the contractions; this was also the case with the right vagus; the reflex action from the feet was lost; and at 2 h. 40 m. the heart stopped." From this experiment it is apparent that the vagi retain their inhibitory power over the heart during the whole period that its action is being modified by physostigma. Ultimately, however, they are themselves paralyzed, as might be anticipated from the analogies that exist between them and the spinal nerves, and the functions of the vagi and the spinal nerves are lost simultaneously, or nearly so. It is, therefore, quite possible, as far at least as conveyance by the vagi nerves is concerned, for Calabar bean to act on the heart by exciting the cardiac inhibitory centre in the medulla oblongata. But if this be the method of its action, the prevention of this pos-

sible influence by division or previous paralysis of the vagi, or by destruction of the medulla oblongata, should render it impossible for Calabar bean to produce its usual effect upon the heart.

To determine the above, the following experiments were performed: "The heart and the two vagi nerves of a frog were exposed, and the latter divided, and in a few minutes the cardiac contractions were found to be 66 per minute. Two grains of extract were then injected into each thigh. In two minutes cardiac contractions were 60 per minute; in forty-two minutes, after being reduced to nine beats, the heart stopped in diastole for thirty-five seconds." It continued to contract very irregularly for many hours afterwards. These experiments are deemed sufficiently conclusive that it is not upon the vagi that the effects are produced which lower and ultimately destroy the contractility of the heart; and the same facts are deduced from experiment upon the spinal centres.

To complete the evidence, it is shown by experiment that no connection of cause and effect necessarily exists between the impaired respiratory movements and the cardiac paralysis. Thus, in a dog, in one minute and thirty seconds after the poison was administered, the number of cardiac contractions had fallen to less than one-half, while the respiratory movements had increased by one per minute. It shows distinctly the absence of any respiratory change to cause the marked effects that were produced on the heart's action. As the arrest of the respiratory movements goes on, the action of the poison on the heart is assisted by impeding the circulation.

From the investigations thus set forth, it is the opinion of Dr. Fraser that the cardiac action of physostigma is quite independent of the cerebro-spinal nervous system, and is not a mere effect of the paralysis of respiration. It must, therefore, be caused by an action of a direct nature on the cardiac ganglia, which seem to be the only constant exciters of this organ, however its contractions may be regulated by other nerves. The peculiar changes that the heart's action undergoes, the diminution in the frequency of the beats, then their stoppage or irregularity, sometimes followed by renewal of the rhythmical contractions, or of independent movements in all the chambers or in one only, prove that Calabar bean first diminishes the vitality of the exciting ganglia, and then paralyzes them. It resembles digitaline and the extract of oleander.

7th. *Action on the Bloodvessels.* 1st. *Effect on Blood Tension.*—The results of experiments conducted for the purpose of determining this point were the following: During the first stage of poisoning, the arterial tension diminishes slightly, the venous tension arrives at a higher maximum rather later and by more gradual stages than the arterial, and in the same gradual manner declines until death. In neither system is the highest point reached before a very considerable fall has been caused in the frequency of the heart's contractions. The temperature rises during the poisoning, and attains its maximum near the time that the blood pressures have commenced finally to diminish.

By experiment, it was shown that the same effects are produced on the circulation, after the division of the vagi, as when these inhibitory nerves retain their connection with the heart. The action on the frequency of the heart's beats is well illustrated in this experiment, from their number having been considerably increased, before the exhibition of the poison, by the division of the vagi nerves.

The distance over which the mercury travels in the oscillating column seems to be increased as the effects of the poison manifest themselves. This appears from all the experiments in this series, but especially from the second and the last. The division of the vagi in the last experiment had abnormally diminished the distance of oscillation; and yet it became much greater after the poisoning than it had been previous to the nerve division. It further appears that this increase in the oscillating distance occurs when the arterial tension is about its maximum. It can only be explained by a very decided increase in the force of the cardiac contractions. Dr. Fraser believes that this effect on the heart is altogether a reflex one, due to the resistance to the propulsion of the blood that the augmentation in the general vascular tension must excite. In a normal condition, a stimulus of this nature might be expected to operate by increasing

the *number* and not the *strength* of the cardiac contractions, but any tendency to increased frequency is opposed by the action of physostigma, for we have already seen that this substance diminishes the number of the contractions by prolonging the diastolic pause. Their strength may, however, continue unchanged, and during the operation of physostigma a stimulus may even increase it without affecting the number of beats, so long as the ganglia that initiate the systolic contraction have their excitability merely lowered without being destroyed, and the contractile power of the cardiac muscle continues undiminished.

2d. *Examination of the Calibre Changes in the Smaller Bloodvessels.*—The action of Calabar bean on the minute bloodvessels of the frog's web is to contract them considerably first, and then dilate them. This is attributed to a specific effect on the ganglia and nerves that govern the calibre changes of the vascular system, because it is by their influence that the final dilatation must be produced.

In explaining the changes of blood tension in mammalians, Dr. Fraser believes that the slight fall that usually occurs in the mean pressure immediately after the poison has been exhibited is solely due to the diminution in the rate of the heart's contractions which has always been caused by that time. The subsequent rise in both arterial and venous tensions, before any considerable embarrassment of the respiration, may be satisfactorily explained by such contraction of the smaller arteries as has been demonstrated to occur in the vessels of the frog's web. It cannot be caused by increased cardiac pressure; for the heart is at the same time contracting with only one-half of its normal rapidity, or with even less, while the greater force of each heart beat the increasing oscillating distances appear to indicate is quite insufficient to account for the high degree of blood tension sometimes attained. The subsequent more or less rapid diminution of pressure in both arterial and venous systems is the evident result of the great dilatation in the minute bloodvessels, assisted by the weakening of the *vis a tergo* that this poison quickly produces.

The *elevation of temperature* in mammals poisoned by Calabar bean is inconsiderable; this is attributed to the general muscular contractions.

Action on the Blood.—The blood obtained from animals that have been poisoned by Calabar bean is generally dark in colour, because of the usual cause of death, but if drawn from the left side of the heart after a very large dose of the poison, it has the scarlet hue of arterial blood. It frequently remains semi-fluid for some time, and then clots loosely. In dogs and rabbits the red blood corpuscles are changed in form and present various irregularities of outline, among which a well-marked stellar crenation preponderates. No change is produced in the red corpuscles of birds or frogs, or in the white corpuscles of any animal. The respiratory function of the blood did not appear to be interfered with.

In twenty-one minutes the lymphatic hearts of the frog ceased to beat after the injection of the poison.

The effect upon the peristaltic movement of the viscera is similar to that on the capillary vessels. For some time the intestines move with increased vigour; they then contract so as very considerably to diminish their calibre, and finally they assume a condition of dilatation with lessened movement.

The marked effect which attracted attention to the Calabar bean is contraction of the pupil. Discussion is still exercised in explaining the contraction and dilatation of this structure. Without pretending to settle this question, Dr. Fraser, from his experiments, accedes to the belief that the cause of pupillary contraction during poisoning by internal administration is in all probability to be found among those consequences that naturally succeed the removal of the influence of the cervical sympathetic nerve, but irrespective of paralysis of the radiating fibres of the iris, is disposed to attribute something to the static condition of the bloodvessels of the eye.

With respect to the effects when topically applied to the nerve centres or nerves, when absorbed, the same paralytic effects were induced, but when locally applied to nerves their functions to this extent of application were destroyed. The local effect on muscles, whether striped or unstriped, is to destroy their excitability.

The topical action upon the eye manifested by contraction is as decided as when the article is introduced into the circulation; and what is extremely interesting, one pupil may be thus contracted by physostigma, while the other is dilated by curara. The explanation of the difference of operation between these two substances is one of great interest. J. C.

ART. XXII.—*Lectures on the Progress of Anatomy and Surgery during the Present Century.* By SIR WILLIAM FERGUSSON, Bart., F.R.S., etc. etc. 8vo. pp. xii. 302. London: John Churchill & Sons, 1867.

THERE are few books from reading which we have derived more pleasure or more profit than from this, by Sir Willian Fergusson. Many of our readers are doubtless already familiar with these lectures, through their publication in the *Lancet* for 1864 and 1865 (from which periodical they are now reprinted), and with the twelfth especially, from its having been republished in the number of the *Medical News and Library* for September of the latter year named.

Since the death of Brodie, Sir Wm. Fergusson may perhaps be justly considered as the representative man of English surgery, and certainly no one can listen to his teachings as embodied in the volume before us, without feeling an ever-growing admiration for his eminent skill and acquirements as a surgeon, as well as for that trait which most adorns (unhappily too rarely) the character of a great surgeon, his sincere and unfeigned modesty, both as a writer and as a man.

These lectures were delivered before the Royal College of Surgeons of England, during the years 1864 and 1865, in the discharge of the author's duties as Professor of Anatomy and Surgery to that body. The first lecture is introductory, and the remainder treat respectively of the following subjects: on conservative surgery, on hare-lip and split-palate, on lithotomy in children and on lithotrity, on excision of the knee (two lectures), on minor surgery, on lithotrity, on lithotomy, operations on the jaws, on amputation, and on operations and practical surgery.

Our readers may easily perceive, from the above summary, the importance and scope of the author's remarks; and we doubt not that they will agree with us, that anything upon these subjects which Sir Wm. Fergusson thinks it worth while to teach, it is certainly worth while for all who practise surgery to attentively heed.

It is a trite remark that there is no surer proof of ignorance or mere superficial information than a pretension to universal knowledge; he that strives to excel in all things will generally fail of eminence in any. On the other hand, the man who honestly confesses his want of skill in certain branches of scientific instruction, may usually be trusted as to his acquirements in those which he does profess to have mastered. Accordingly, we are not at all surprised to meet with the following modest statements of Sir Wm. Fergusson, with regard to the recent advances in certain specialities of modern surgical practice.

"The application of the stethoscope to surgical diagnosis, the exclusive use of the microscope in pathology, the invention of the laryngoscope and its recent application in practice, are all interesting features in modern surgery. The ophthalmoscope, too, is one of the most ingenious and clever inventions for which surgery is indebted, nor can there be a doubt that, in special cases, the speculum is also of vast service. But I must leave it to greater enthusiasts, and those more skilled than myself, to dilate upon the marvels divulged by these instruments, and to fix upon their relative value as additions to the surgery of the present century.

"Ophthalmic surgery has made wonderful strides within our own time; but I do not profess myself competent to dwell on such a theme. It is pleasing to see that those who excel in this department, particularly amongst ourselves, are gentlemen who from their education and competency, are fitted to hold the

highest places in general surgery, and that many of them have held, and now hold, the foremost rank in our profession. Let me here express a hope that some future professor in this chair may be able to say as much for all who may devote themselves to the specialities of modern custom."

It will perhaps surprise some of our readers to hear that the term "conservative surgery" with which we are all now so familiar, had its origin not more than sixteen years ago; it was first used (we are told on page 34) by our author in a paper published in the *Medical Times and Gazette* for January 3, 1852.

It is not our purpose to attempt any analysis of these excellent lectures. They should be read and carefully pondered by every practical surgeon. A writer whose name we cannot recall, has compared medical literature to wine; the productions of young authors and experimenters may be pure and sound, but they have a certain sharpness and immaturity which can rarely be concealed. The writings of a senior in the profession, are on the other hand (if of good quality), characterized by a mellowness and fulness of body, like a venerable madeira or a crusty old port. Let us say that whoever has recourse to Sir William Fergusson's cask, will obtain an article of unsurpassed excellence.

The one hundred and nine wood-cuts which illustrate the volume before us, no doubt looked very well in the pages of the *Lancet* where they first appeared; we must confess, however, that they present rather a dreary contrast to the large type and white paper with which the publishers have issued the text. The edges of the book are all trimmed in the American fashion—a fashion which we have never been sufficiently utilitarian to think a good one. J. A., JR.

ART. XXIII.—*Syphilitic Affections of the Nervous System, and a Case of Symmetrical Muscular Atrophy, with other Contributions to the Pathology of the Spinal Marrow.* By THOMAS READE, M. B. T. C. D., L. R. C. S. J. 12mo. pp. 111. London: John Churchill & Sons, 1867.

THIS small volume is made up mainly of three papers, which were published in the years 1851 and 1852, in the *Dublin Quarterly Journal.* One of these papers had been offered for publication as early as 1847, at which time the Journal was under other editorship, but was not accepted on the ground of the matter not being original.

Mr. Reade has encountered, in the course of his practice, some twelve cases of disease where the nervous system was affected in various ways—where there was a history of venereal infection, and where, by the use either of mercurials or of the iodide of potassium, the affection of the nervous system was cured or greatly relieved. These cases he has published as cases of *syphilitic meningitis.*

While these cases were under observation the patients were submitted to the examination of surgeons holding most prominent positions in Great Britain, who did not agree with Dr. Reade as to these cases resulting from a syphilitic cause.

The nervous system was not believed by them to be affected by syphilis. Syphilitic *meningitis* is not the proper name to give to the pathological condition, but no one at the present day should question the syphilitic origin of symptoms such as those described in the cases related by Dr. Reade. To have recognized this origin however in 1837, which is the date of the first case, shows considerable powers of original observation, or else more knowledge of old writers than is generally possessed.

John Hunter taught that the brain was not attacked by syphilis, and this was held to be true by his followers—that is, by all British surgeons in prominent position during the first half of this century. Ricord, in his edition of the French translation of Hunter (Paris, 1847), makes no mention of affections of the nervous system. We have, however, heard him speak of such affections in lectures delivered in 1851, and in those published in the *Lancet* in the year

1848 he refers to them, though very briefly. He says, for example, that he has found such tumours (gummy) in the brain, and that M. Cullerier has reported a case where this organ was similarly affected. Subsequently, when speaking of the action of lesions of the osseous system upon neighbouring parts, he says that paraplegia may be produced also by an elastic tumour, and adds that it is important to diagnose between this and osseous lesion.

During the past few years nervous affections of a syphilitic origin have been a good deal written about, and the subject being one of great interest and importance, and yet scarcely referred to in works upon venereal diseases, it may be well to give some notes, to aid persons desirous of investigating it further.

Zambaco, an *interne* of Ricord at the Hôpital du Midi in Paris, in 1862 published a work entitled *Des Affections Nerveuses Syphilitiques*. This is a very comprehensive essay upon the subject, and obtained the Civrieux prize at the Academy of Medicine. Professor Jaksch has written upon syphilitic paralysis in general, and especially hemiplegia and paraplegia; a *résumé* of his views is contained in the *Biennial Retrospect of Medicine, Surgery, and their Allied Sciences* for 1865–6, published for the New Sydenham Society. In an article by Dr. Pierreson on Facial Diplegia, in the *Archives de Médecine* for August, 1867, is the following case, taken from *Virchow's Archives* for 1858: A man contracted syphilis, roseola; three months after, diplopia; and three months after that, facial paralysis, with difficulty of swallowing. After death, "between the bulb and the meatus of the internal auditory canal was found a thickening of the pia mater, with an exudation. The nerves, whose paralysis had been noted during life, were comprised in the thickness of the exudation."

In the admirable papers upon Nervous Affections, of Dr. Hughlings Jackson, in the *Reports of the London Hospital*, syphilis is several times spoken of as a cause of such affections. In the lectures on hemiplegia, in the second volume, hemiplegia from syphilis is given as one of six pathological varieties of that affection, and this important observation is made, that the kind of hemiplegia we see most often in syphilis is paralysis of a part of the face, partially of the tongue, and of the two limbs, all on the same side, which we have in disease of the corpus striatum and the thalamus opticus (*loc. cit.*, pp. 312–13). We cite from a paper by the same author, in the first volume of these reports, the following important remark upon the pathological anatomy of this affection: "So, too, we find that 'diseases of the nervous system' are not always diseases of the nervous tissue; but often of other tissues which enter into the composition of nervous organs, of bloodvessels, connective tissue, &c. Now, it is a well-known fact that syphilitic deposits are generally found on the surface of the brain. They begin in the pia mater, and *extend* into the nervous mass; in short, they affect the connective tissue where it is in bulk. There is, although this is denied too, connective tissue in the substance of the brain itself, but I never saw deposits unconnected with the pia mater; the reason being, probably, the simple one, that there is very little, if any, connective tissue in the central masses of the nervous system." This, as Dr. Jackson goes on to say, it is important to know: "We cannot treat an organ like the corpus striatum, but we may prescribe for a patient who has syphilitic disease of the connective tissue, wherever it may be."

J. Lockhart Clarke, in a valuable article in the first volume of *St. George's Hospital Reports*, says: "Syphilis, again, is a disease which may occasionally give rise to symptoms so nearly resembling those of locomotor ataxy, as to be somewhat perplexing in diagnosis. Thus, syphilitic affections of the periosteum, or of the membranes of the base of the skull, may paralyze any of the cerebral nerves, and produce strabismus, diplopia, ptosis, or amblyopia. Periostitis, as is well known, is a common cause of severe pains in the extremities; and exostoses, periosteal swellings in the vertebral canal, and syphilitic deposits in the membranes of the cord, may be productive of pains, formications, anæsthesia, and even unsteadiness of gait." (*loc. cit.*, p. 100.)

In Mr. Hutchinson's remarkable papers on "Inherited Syphilis," in the *London Hospital Reports*, are most interesting examples of affection of the nervous system.

We said that for an English surgeon to have recognized the syphilitic origin

of nervous affections, in 1837, shows considerable powers of original observation, or else an unusual acquaintance with old writers. Let us turn to the latter a moment. Van Swieten, in his Commentaries, says that in venereal disease he has seen the worst kind of epilepsy, blindness, deafness, &c. "Cerebral lesions," he adds, "are often observed in inveterate syphilis, from the mildest vertigo to deadly apoplexy." (vol. v. p. 371, Paris, 1773.) Boerhaave, in the aphorism upon which Van Swieten is commenting (§ 1445), says: "Possunt oriri tumores gummosi, et exostoses in calvariæ osseæ parte internâ, quæ premendo cerebrum, omnes ejus functiones turbant." Long before this, however—in fact, soon after syphilis was known—nervous affections were described. Astruc quotes Dionysius Fontanonos, who flourished at Montpellier in 1526; in his work upon the Practice of Medicine, printed at Lyons, in 1550, he has a chapter *De Cephalalgia a Morbo Gallico*, and proposes mercury to cure it. (*Astruc*, p. 464, Paris, 1736.) Astruc himself speaks of vertigo, epilepsy, convulsions, trembling of the limbs, hemiplegia, paraplegia, and partial paralysis, as arising from syphilis. (See pp. 295, 316, 317.)

In none of the cases recorded by Mr. Reade was there an opportunity of verifying the diagnosis by a post-mortem examination. It is taken for granted by him that this is made certain by the history of the symptoms, and, above all, by the good effects following the use of mercury. We call attention to this fact, for there is too general an inclination now-a-days to question the power of mercury in venereal affections. Brodie's remark on this point, in his lecture on the administration of mercury in syphilis, is a good one, and is true of many things concerning that disease: "You must not suppose that we have made an advance in all departments of surgery; on the contrary, I am sure that in some we have gone back." It is worthy of notice that at a discussion on the employment of mercurials in syphilitic therapeutics, recently held in the Society of Surgery in Paris, only one, or at most two of the members spoke against this treatment, "*consacré par une experience trois fois seculaire*," as one of the members very justly styles it. (See *Archives de Médecine* for August, 1867.)

W. F. A.

ART. XXIV.—*A Practical Treatise on Shock after Surgical Operations and Injuries, with especial reference to Shock caused by Railway Accidents.* By EDWIN MORRIS, M. D., F. R. C. S. (Exam.) &c. 12mo. pp. 89. Philadelphia: J. B. Lippincott & Co., 1868.

Ὅτι Καλλίμαχος ὁ γραμματικος, το μεγα βιβλίον ἴσον, ἔλεγεν, ἶναι τῷ μεγαλῳ κακῷ.[1]
ATHENÆUS, *Deipnosophist*, Lib. iii. c. 1.

"He that increaseth knowledge increaseth sorrow."—*Ecclesiastes* i. 18.

Had Dr. Edwin Morris's "treatise" been submitted to Callimachus the grammarian for review, that ancient critic, at least, could not have complained that it was a *great* evil, for in spite of its slightly pompous title, it contains less than eighty small pages of reading matter. Nor, did the Preacher preach in our days, could he justly reproach Dr. Morris with adding to the already too heavy load of human sorrow; for there is nothing in his book, so far as we have found, which is not already known to every ordinarily well educated surgeon. The author states in his preface that his "treatise" is "the result of the experience of six and twenty years," and that he has not yet finished his labours in this department. Let us hope that he may not painfully verify those other words of the Preacher, "Of making many books there is no end, and much study is a weariness of the flesh."

Dr. Morris, in the very first sentences of his volume, strangely confuses the *shock* (properly so called) which follows injuries, with the widely different effects of mental emotion; forgetting, apparently, that some of the most severe cases

[1] Callamachus, the grammarian, used to say that a great book was equivalent to a great evil.

of shock ever met with, are in patients whose mental and moral condition remains totally unmoved by the injuries which they may have received.

The first half of Dr. Morris's book gives a number of very good but somewhat familiar quotations from the writings of surgical and other writers, not omitting a reference to the history of that wearisome though brave officer in the camp of the Duke of Alva, upon whom the Provost Marshal played such a shameful practical joke. At the foot of page 15 are printed four lines of most unpoetical and ungrammatical nonsense, which are unkindly attributed to Lord Byron. We feel very confident that the illustrious author of "The Prisoner of Chillon" could never have been capable of writing such stuff, which is indeed of the kind that "neither gods nor men are said to permit."

Pages 48 to 70 are principally occupied with what we must consider a most discourteous and uncalled-for attack upon Mr. Erichsen, on account of his recently published essay "On Railway and other Injuries of the Nervous System." Fortunately Mr. Erichsen's position, both as a surgeon and as an author, is too well established to be in danger from the animadversions of the writer of the present "Treatise on Shock."

The last portion of the volume deals with the treatment of shock, and we will do the author the justice to say, that if we have not found anything new in this portion of his work, we at least have not observed anything manifestly incorrect, except that we should be very sorry to adopt Dr. Morris's recommendation to give "two to three drachms of laudanum as an enema, repeated when necessary." p. 74.

The following description of an autopsy (page 13) is so fine that we must quote it for the edification of our readers: "Soon after death the heart was examined, also the brain: nothing abnormal was found, &c. Thus it would seem that *shock* and putrid infection, meet hounds of death, hunted this unfortunate man, as it were, in couples; *shock* held him down, while pyæmia fastened in her poisoned fangs; and so while

> "Presently through all his veins ran
> A cold and drowsy humour, which did seize
> Each vital spirit,

shock, like a dog, still held on, till the great killer cried 'Dead!'"

As further examples of the beauty and lucidity of Dr. Morris's style, we may quote from page 42: "Before his removal from the table to the bed, he turned faint and deadly pale; the extremities cold; he vomited freely, *which smelt very strongly of brandy*," &c.

And again from page 48: "Bringing actions against railway directors for the slightest personal injury sustained in a railway accident has become of late very prevalent; and this is owing, unquestionably, to the prominent manner in which injuries of the nervous system, caused by railway accidents, have been thrust before the public under the startling announcements of 'Railway Accidents or Collisions; their Effects upon the Nervous System,'[1] 'On Railway Injuries.' *These writers have evidently given an unfair bias*," &c.

On page 43, the author tells us that in a certain case he "gave a very unfavourable *diagnosis*."

Seriously, had we not read this book ourselves, we could not have believed that such a production could have originated from a Fellow of the Royal College of Surgeons, by Examination. We should like to know Sir Dominick Corrigan's opinion of the way in which titles are given by the licensing bodies of England.

This book is beautifully printed upon tinted paper of a very good quality. We can only regret, on account of our excellent friends the Messrs. Lippincott, that the gem which they have brought before the American public is not more worthy of the very elegant setting in which they have encased it.

J. A., JR.

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[1] The title of a pamphlet by William Camps, M. D. 8vo. pp. 20. London: H. K. Lewis.

ART. XXV.—*A Manual of Inorganic Chemistry, arranged to Facilitate the Experimental Demonstration of the Facts and Principles of the Science.* By CHARLES W. ELLIOT, and FRANK H. STORER, Professors of Chemistry in the Massachusetts Institute of Technology. Second edition. pp. 605, Appendix, &c., lix. New York: Ivison, Phinney, Blakeman & Co., 1868.

THIS manual claims only to embody in a new form the existing knowledge of the facts and principles of chemical science without adding anything novel to either. The method of presenting the subjects to the learner's mind is by a combination of analytical and synthetical processes proceeding step by step, from the familiar to least known facts, introducing in their appropriate places the technical terms and principles of the science, or those deductions which chemists have drawn from the facts as they have been developed.

The consideration of the air and its largest constituent, nitrogen, first claims attention, then succeeds water, its separation into its constituents hydrogen and oxygen and the properties of these gases, under which heads are explained the nature of atoms and molecules, of oxidation, and combustion, the processes of diffusion of gases, solution and distillation. Having thus shown the material facts in relation to these elements, their compounds of an inorganic character are brought under view, the combinations of nitrogen with oxygen and with hydrogen affording ample means of explaining clearly the ratios in which they unite, the modes adopted to denote these relations by means of empirical and rational formulæ, carefully insisting that the former expresses facts, the latter opinions which can be adopted only when consonant with *all* the reactions and relations which have been observed, while at the same time they facilitate the acquisition of the science by presenting in a brief, clear, and precise form, both the known and the probable nature of the changes which take place in simple as well as complicated reactions.

Proceeding on the same plan, muriatic acid is considered before noticing its constituents, and its properties, compositions, and analysis discussed. Chlorine being now set free, its properties and union with the previously described elements become proper subjects for investigation, with the analogous bodies bromine, iodine, and fluorine. Ozone and antozone are noticed in much detail on account of the subject being one of primary importance in the present, and of probable increased value both practical and theoretical for the future.

Thereafter the elements are grouped according to their natural relations, by which much repetition is avoided and the student familiarized with the close similarity in nature and reactions which is found to exist among many bodies. Sulphur a familiar substance becomes the type of a group including selenium and tellurium, with perhaps oxygen—capable of assuming two distinct crystalline forms, opens the way to the discussion of the systems of crystallography and processes by which crystals may be produced, and its range of combination to that of the nomenclature adopted for the different compounds which it and the other elements form with each other and with metals. Combination by volume and condensation ratios occupy a distinct chapter under this head.

The nitrogen group, containing phosphorus, arsenic, antimony, and bismuth, next attract attention; isomerism and allotropism are clearly defined, and liquid diffusion as differently exhibited by colloids and crystalloids, proven experimentally by means of the dialyzer, with the cautions necessary to insure success. If there be any defect in the system of teaching here adopted, it presents itself under the head of the detection of arsenious acid, where the ammonio-salts of copper and silver could not be noticed without introducing subjects not yet considered, neither do they subsequently appear under their special heads in this relation.

The carbon group in its type, as the element par excellence of organic compounds, opens the way to prominent subjects of chemical philosophy as developed by the compounds of carbon with hydrogen. These, so numerous as when united with oxygen and other elements to count by thousands, have by their complexity given rise to many theories as to their internal organization, which, however much they may differ from each other, all tend to show the great

advantage which is to be obtained in the study of complicated compounds by the power of arranging them in groups or series according to their analogy in nature or composition. Carbon, hydrogen, and oxygen being the elements which are principally engaged in the phenomena of combustion, the acquaintance with their properties and that of the compounds formed by their union renders possible the clear consideration of the effects produced by their union as exhibited in the evolution of light and heat. The nature of ignition and flame, lamps, blowpipes, &c., the indestructible character of matter and economy of fuel are commented on and explained.

The metals, although more numerous, do not occupy in their consideration the same amount of space. The alkali group, which is made to include thallium and silver, introduces spectrum analysis, glass, gunpowder, photography, &c., concluding with atomicity or the *atom-fixing* power of chemical elements, as exhibited by the power of holding in chemical combination one, two, three, or four atoms of hydrogen. The calcium group follows with remarks on the hardness of waters, and their liability to be contaminated by lead, the last metal in the group. The magnesium group, under zinc, give rise to remarks on the galvanic current and the correlation of forces, and the aluminium group to further remarks on nomenclature.

The remaining metals are associated on the same plan, occupying three chapters, a fourth being devoted to the consideration of atomic weights, and symbols, classification, atomic heat, &c. The appendix takes up the subject of chemical manipulation, weights, and measures, &c.

Written in a clear and comprehensive style, and accompanied by well chosen experiments lucidly described, this work is well calculated for the instruction of the beginner, by alluring onward and gradually bringing to his notice the intricacies of the science instead of repelling by unaccustomed words and ideas which the new student finds hard to seize and appropriate.

In typography and execution the book is worthy of commendation and the size convenient for constant use. R. B.

ART. XXVI.—*Diseases of the Heart: their Diagnosis and Treatment.* By DAVID WOOSTER, M. D. 12mo. pp. 209. San Francisco: H. C. Bancroft & Co., 1867.

THE author of this little work tells us in his preface that it is not "a strictly systematic treatise," and deprecates a too rigid scrutiny by saying that it "has been prepared during the intervals of daily toil." His object has been to present to the profession a book in which the rules for the diagnosis and treatment of diseases of the heart and aorta shall be clearly laid down. For the most part, we think, Dr. Wooster has attained his object; certainly so far as the limits of his book will admit of, the seat and character of the different murmurs originating in the heart or in the aorta are correctly given. We think, however, that the assertion which he makes, that "there is no known pathognomonic sign or signs of aortic constriction," is one which few practical auscultators will be disposed to admit; it is true that aortic, like mitral constriction, may exist without a murmur, and that a systolic murmur, heard best at the base of the heart, is often independent of organic disease of this orifice; yet we believe that care will generally enable us to recognize an aortic constrictive murmur when it does exist, as no other murmur is so well propagated in the course of the aorta and large arteries.

The best authorities on the diseases of the heart have evidently been freely consulted by our author, and in his preface he candidly acknowledges his indebtedness to them. In one instance, however, he has misquoted Walshe; he says: "yet neither Walshe nor Hope ever observed the thrill (purring tremour) in any valvular disease." Walshe states distinctly that this thrill may be due either to mitral regurgitant or to aortic constrictive disease (Amer. ed., p. 43,

1862). And in the Appendix he admits having recently observed it accompanying aortic regurgitation.

The word embolism is used, we think incorrectly, to mean the coagulation of the blood in the cavities of the heart. It is generally applied to the impaction in an artery, of a clot or vegetation which cuts off the blood from the part supplied by this artery. The obstructing body may come from the heart or, it may be, from some one of the veins.

A little more care bestowed upon the reading of the proof sheets would have repaid the author; thus, case 5 is made to follow immediately case 3; at page 130 we are told that pericarditis is a much more fatal disease than endocarditis, while the reverse is stated at page 196; coronary is spelled corronary; auscultatory, auscultory; albuminuria, albumenuria; Bouillaud, Boillaud, &c. These are all errors which no amount of "daily toil" entirely excuses.

To those who have neither time nor inclination to read the systematic treatises on diseases of the heart, this little work will give a very fair idea of the present state of our knowledge of the subject. J. H. H.

ART. XXVII.—*Clinical Observations on Diseases of the Heart and Thoracic Aorta.* By PEYTON BLAKISTON, M. D., F. R. S., Fellow of the Royal College of Physicians, &c. 12mo. pp. 309. London: Longman, Green, Longman, Roberts & Green, 1865.

DR. BLAKISTON, in the book before us, embodies the results of an experience in public and private practice, extending over a period of thirty years. During this time he has seen the science of pathology make rapid strides, and this change has been accompanied by a corresponding improvement in the means at our command for the diagnosis and treatment of disease. The changes which have occurred in the last thirty years are ably discussed in the opening chapter. Our author has, however, fallen into an error in ascribing to Dr. Jackson, of Philadelphia, merit which belongs to the late Dr. James Jackson, Jr., of Boston—that is, the discovery of the importance of the prolongation of the expiratory murmur as a sign of incipient phthisis.

The book is divided into three parts. In the first is considered the pathology of the diseases of the heart and of the thoracic aorta; in the second, their diagnosis; in the third, their treatment—the whole being interspersed with reports of cases which illustrate some points in the text. In fact, these reports of cases are so freely distributed through his pages that the text seems rather subservient to them. Some of the cases which have come under his observation are certainly unusual; they are all well reported, and add considerable value to his book.

Dr. Blakiston attributes much importance to the existence of tricuspid regurgitation as a cause of cardiac dropsy, and has been able to verify his assertion as to its frequency by reference to the post-mortem appearances in almost all cases in which dropsy had been a prominent symptom during life. In these cases, the tricuspid valve was found incompetent, either in consequence of inflammatory action or as a result of the general dilatation of the right ventricle. Great care, he says, will frequently enable the observer to detect incompetence of this valve, which might easily escape a hurried examination. Regurgitation at the tricuspid orifice does not give rise, in every case, to a murmur or to venous pulsation; hence the frequency with which its existence may be unsuspected during life. In every case, however, in which tricuspid regurgitation is known to exist, he thinks our prognosis should be exceedingly grave, as it must, sooner or later, produce congestion of the cerebral and other portions of the systemic circulation.

Where there is so much to commend it is not pleasant to point out even a trifling inaccuracy. We think, however, that the name of so distinguished a pathologist as Cruveilhier should be spelled correctly, not Cruvellier, as in the book. J. H. H.

ART. XXVIII.—*Etudes sur les Médications Arsenicale et Antimoniale et sur les Maladies du Cœur.* Par le Docteur LUCIEN PAPILLAUD (Henri Almès). 8vo. pp. 79. Paris: J. B. Ballière et Fils, 1867.

M. PAPILLAUD, having found that the treatment of diseases of the heart by the ordinary remedies was often followed by an unsatisfactory and negative result, has of late years had recourse to a combination of arsenic and antimony, and the object of the *brochure* before us is the establishment of the claims of these medicines as active agents in the management of such diseases. We need only refer to the influence which arsenic exerts upon the course of cutaneous eruptions, of malarial fevers, and of various nervous affections, to convince ourselves that it is capable of producing a powerful effect in certain conditions of the system; and it is therefore not surprising that our author has found his patients improve while taking it. Antimony is not generally considered to be a tonic, which M. Papillaud thinks it is, but its usefulness in all doses as an alterative would be denied by few, and there is every reason to believe that in hypertrophy of the heart it may occasionally act as a sedative. Our author makes, however, too great a demand upon our credulity when he asserts that under the use of these two medicines hypertrophy and cardiac obstruction have disappeared. Had he said the symptoms of these conditions were no longer present, we should not have been disposed to think that he had done that which he says we are liable to do—misinterpret facts.

M. Papillaud, in the course of his experiments with these two medicines, has found that they are most conveniently administered in combination under the form of the arsenate of antimony, and this salt, he says, may be given in doses of four millegrammes daily, which will be sufficient to produce a marked improvement in the course of a few days. In one case a centigramme was administered daily without giving rise to any unpleasant results. Although patients have frequently taken this medicine almost daily for five years, there has never been any cumulative effect produced, but uniformly a decrease in the frequency of the pulse, an increase of the appetite, and a gain in weight.

M. Papillaud has evidently had a theory to prove, and consequently the results of his treatment have appeared to him favourable. The remedy, however, might be tried in cases in which the classical treatment had failed, and in those cases in which functional disease predominated over organic. J. H. H.

ART. XXIX.—*On the Signs and Diseases of Pregnancy.* By THOMAS HAWKES TANNER, M.D., F.L.S., etc. From the Second and Enlarged London Edition. With four coloured plates, and illustrations on wood. 8vo. pp. 490. Philadelphia: H. C. Lea, 1868.

THE first edition of Dr. Tanner's work on the Signs and Diseases of Pregnancy, which appeared in 1860, was very favourably received as presenting a fair compendium of the actual state of professional knowledge in respect to the several subjects of which it treats; and as a treatise well adapted to communicate to all who should consult it, correct and definite views as to the proper signs of pregnancy and their relative value, and the symptoms and diagnosis of the leading diseases and accidents to which the female is liable during gestation. In the edition before us, every chapter of the work has been improved by the addition of whatever reliable observations have been recorded during the seven years which have elapsed since its first appearance, and of the results of the ample clinical experience of the author during the same period.

The very thorough revision the work has undergone has added greatly to its practical value, and increased materially its efficiency as a guide to the student and to the young practitioner.

In this second edition the original plan of the treatise has been adhered to, namely, that of enforcing the general facts inculcated as to the pathology and therapeutics of the several affections incident to pregnancy by the detail of illustrative cases. A species of teaching approaching, in some respects to that given at the bedside of the sick, and well adapted, in the absence of the latter, to aid the student in impressing on his mind a correct and vivid idea of the phenomena and course of disease from its onset until its termination, and a rational conception of each step of the remedial treatment instituted.

D. F. C.

ART. XXX.—*Pathological Anatomy of the Female Sexual Organs.* By JULIUS M. KLOB, M. D., Professor at the University of Vienna. Translated from the German by JOSEPH KAMMERER, M. D., Physician to the German Hospital and Dispensary, New York, and BENJAMIN F. DAWSON, M. D., Assistant to the Chair of Obstetrics, College of Physicians and Surgeons, New York. 8vo. pp. 299. New York: Moorhead, Simpson & Bond, 1868.

THIS work by Dr. Klob, of Vienna, presents, without question, a very complete and reliable exposition of the pathological anatomy of the uterine organs and their annexes, in reference to each of the abnormal conditions to which these parts are liable, in accordance with the revelations of the latest observations. It brings into one view a mass of facts recorded by different observers in general treatises on pathological anatomy, in monographs on individual diseases of the female sex, and in papers published in the medical periodicals of different countries. As might be expected, it presents a very full exposition of the latest views of the most authoritative of the physicians of the German school. The profession in this country may therefore be congratulated that this admirable treatise, by the satisfactory translation before us, has been placed within its reach. Every portion of the work is deserving of a careful study; we would more especially call attention, however, to the section which treats of "*adventitious growths*" of the uterus, especially polypi, tumours, etc. The chapters on dropsy of the uterus, uterine tympanitis, and accumulation of blood in the non-gravid uterus, will be read with interest and profit.

As is well remarked by the translators of Professor Klob's treatise, to derive all the instruction it is calculated to impart upon the important subjects of which it treats, it must be carefully studied; it is a work illy adapted for casual perusal or occasional reference. Though especially concise for a German scientific work, it can never be considered superficial or unsatisfactory. What is known upon the subject of its specialty is all told, and, in many instances, compared with the views of the author, based upon his own personal observations.

D. F. C.

ART. XXXI.—*The Diagnosis, Pathology, and Treatment of Diseases of Women, including the Diagnosis of Pregnancy.* By GRAILY HEWITT, M. D., etc. First American, from the second London edition, revised and enlarged. With one hundred and sixteen Illustrations. 8vo. pp. 707. Philadelphia: Lindsay & Blakiston, 1868.

THIS second edition of the excellent work of Dr. Hewitt, presents in a form well adapted to conduct the student to a knowledge of the diseases of women, and to assist the young practitioner in his study of these diseases at the bedside of the patient—a very full and clear exposition of the views entertained by the most authoritative teachers as to their pathology and treatment, and their correct diagnosis. This commendation applies especially to the present

edition of the treatise. Although in its first edition the work was a particularly excellent exponent of the subjects embraced in it; yet, in the edition before us, the author, besides bringing his teachings down to a later date, so as to include the more recent observations in reference to the questions discussed, has presented a fuller and more systematically arranged account of the pathology of the diseases of the female in connection with their treatment. The statement on the title-page of the edition before us, that it has been revised and enlarged, will be found to be fully borne out upon a careful examination of its several sections. D. F. C.

ART. XXXII.—*A Practical Treatise on the Diseases of Children.* By D. FRANCIS CONDIE, M. D., F. C. P. Phila., &c. &c. Sixth edition, revised and enlarged. 8vo. pp. 783. Philadelphia: Henry C. Lea, 1868.

A WORK which has passed through five *bona fide* editions, and of which a sixth has been called for, may be regarded as being beyond the bounds of criticism; that high tribunal, the profession, having already recorded a verdict in its favour. All that is needed, in a notice of the present edition of Dr. Condie's well-known treatise, is to state that it has undergone a careful and thorough revision, and the advances recently made in our knowledge of the various diseases of childhood have been carefully incorporated in the several chapters. This will be manifest on a comparison of the present with the previous edition.

ART. XXXIII.—*Atlas of Venereal Diseases.* By A. CULLERIER, Surgeon to the Hôpital du Midi, Member of the Surgical Society of Paris, Chevalier of the Légion d'Honneur, etc. Translated from the French, with Notes and Additions, by FREEMAN J. BUMSTEAD, M. D., Professor of Venereal Diseases in the College of Physicians and Surgeons, New York, etc., with about one hundred and fifty beautifully coloured figures on twenty-six plates. To be complete in five parts. Part I. 4to. pp. 140. Philadelphia: Henry C. Lea, 1868.

THIS is a very handsome edition in English of a well-known and highly valued French publication. That Dr. Bumstead, the author of by far the best and most popular treatise on venereal diseases in the English language, should think it proper to translate and edit this one, speaks more highly in its favour than anything that can be said. It is a judgment *ex cathedrâ*. The translation is an excellent one. The only point which tempts our criticism is where the translator in the chapter on *blennorrhagia* writes: "In common parlance it is called a *discharge*, and *chaude-pisse*." The common English name, the one answering to the French *chaude-pisse*, is *clap*.

This first part contains the introduction and the greater part of the original work which treats of blennorrhagia. The accompanying plates in the first part represent blennorrhagia and its complications, swelled testicle and gonorrhœal ophthalmia. They are admirably and artistically executed. Indeed they are superior to any illustrations of the kind hitherto executed in this country. The notes added by Dr. Bumstead enhance the value of the work. The most interesting, and, we think, also, the most important are those wherein he contends against Cullerier for two kinds of syphilitic virus.

The whole getting-up of this publication is of rare excellence, and most creditable to all concerned. We shall notice it more in detail when we receive the completion of the work. W. F. A.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Nervi Nervorum.*—M. Sappey has recently communicated, through Prof. Robin, to the Academy of Sciences, his discovery of nervous filaments in the neurilemma.

"The neurilemma," he says, "receives nervous filaments which are in the same relation towards the nerves as the *vasa vasorum* are towards the vessels; I therefore propose that they should be designated by the name of *nervi nervorum*. Their existence in the fibrous sheath of nerves had not yet been signalized; yet it is undeniable, and may be easily demonstrated.

"The disposition which the *nervi nervorum* affect in the neurilemma differs in but a slight degree from the one presented by the nervous ramifications in the other dependencies of the fibrous system. Like these, they generally attend the arteries; in like manner they exchange, during their course, numerous divisions, by which anastomoses are effected, so that on different points of their situation a small plexus may be observed, showing irregular and unequal meshes.

"It is not only on the principal or common sheath that they are met with, but likewise on those which involve the principal fasciculi and the tertiary fasciculi. I have been able to trace them even on the sheath of secondary fasciculi. But in proportion as the size of the sheath diminishes, they become far more minute, and are much less frequently met with. They are never seen to extend to the involving membrane of primitive fasciculi.

"The absence of the *nervi nervorum* on the sheath of primitive fasciculi explains why they are not met with on all nervous divisions the diameter of which does not exceed one millimeter.

"The lining or deep-seated membrane of the optic nerve, which fulfils the office of a neurilemma, does not receive any nervous filament. The exterior membrane, on the contrary, receives a great number of filaments, which take their origin in the ciliary nerves.

"The outward sheath of the optic nerves, so rich in *nervi nervorum*, is remarkable also for the abundance of elastic fibres which enter into its composition. The ancients were therefore thoroughly mistaken in considering it as a sort of link between the dura mater and the sclerotica, or, in other words, as prolonging the one and being prolonged by the other. It differs widely from the two structures—first by its elastic fibres, which are wanting in both; and, secondly, by its *nervi nervorum*, which are extremely rare in the dura mater of the brain, and of which there exists no vestige in the sclerotic. Consequently, anatomical analysis, far from confirming the analogy which had been pointed out by so great a number of anatomists, attests, on the contrary, that it differs by its own proper characteristics from the other two membranes, with which it is continuous."—*Gazette Hebdom. de Méd. et de Chirurg.*

2. *Recurrent Sensibility in a Divided Nerve.*—M. BOECKEL has related to the Medical Society of Strasbourg a new case of *complete* section of the nerve, which is reported in brief by M. Reveillout. Immediately after the accident, it was ascertained that the fingers had not lost all sensibility, and the central end of the median nerve was sensitive. The superficial and deep flexor tendons were completely divided, as well as the nerve. The fingers and wrist were flexed during three weeks. The nerve was not sutured. At the end of two months, the movements were restored, and sensibility was normal over the whole palmar face of the hand and fingers, except the index, where it was blunted. According to M. Boeckel, the regeneration of the median nerve is the more rapid for the absence of any suture.—*Brit. Med. Journ.*, Jan. 25, 1868.

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3. *Peripheral Termination of the Motor Nerves.*—Prof. TRINCHESE, of the Genoa University, has drawn the following conclusions:—

"1. In all the animals in which he has been able to investigate the subject, a special organ, the *motor plate*, at the end of the *cylinder axis*, has been found.

"2. The following is the manner in which the nervous element is united with the muscular fasciculus:—

"When the muscular fasciculus is provided with sarcolemma and the nervous element with a sheath, this blends with the envelope of the primitive muscular fasciculus at the point at which the nervous element meets with the muscular fasciculus. At the same point, or a little before, the medullary substance stops, whilst the *cylinder axis* goes on and enters the motor plate.

"3. The motor plate is placed beneath the sarcolemma. It appears generally as a cone, of which the summit is directed to the side of the nerve-tube, whilst the base rests on the primitive muscular fibres.

"4. This plate is formed of two superposed and quite distinct layers, especially in those animals which have large plates—the torpedo, for instance. The upper layer is of a granular substance; the lower is perfectly homogeneous, and is probably only an expansion of the cylinder axis.

"5. In the substance of the granular layer of the plate is found, in the torpedo, a system of canals, in which the cylinder axis ramifies as a large-meshed network. These canals are bounded by a sheath which forms their walls.

"6. When the muscular fasciculi have a central canal the granular substance of the plate is prolonged into the granular substance contained in this canal.

"7. In animals provided only with smooth muscular fibres the cylinder axis traverses the granular substance of the plate dividing into two filaments which have pointed ends at the two extremities of the contractile element.

"8. Altogether it appears that each primitive muscular fasciculus shows one motor plate only. In this one or many nervous elements, proceeding from the subdivision of the same nervous tube, may end.

"9. The diameter of the motor plate increases in proportion with the size of the primitive muscular fasciculus."—*Journ. de l'Anatomie et de la Phys.*, Sept. and Oct. 1867.

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4. *Origin and Nature of Movement.*—M. MAREY, in a recent work (*Du Mouvement dans les Fonctions de la Vie*), says that physiologists and histologists have been baffled in their attempts to trace the "*origin*" of "*movement*," or of "contractility" to one single constant anatomical element in the tissues by which this function is manifested. Microscopic observation shows the existence of the power of contraction in tissues which are perfectly *amorphous*, as well as in those that are highly organized. Many of the lower animals—the Medusæ, for example—are eminently contractile, but no special tissue, such as is the seat of contractile power in the higher animals, can be found in them. The Amœbæ also seem composed of a contractile material, in virtue of which they are capable of assuming the most irregular and varied forms, yet the highest powers of the microscope can discover no trace of organized tissue in them. The vibratile cilia of certain epithelial cells, though they present a more advanced organization, show nothing in their transparent tissue which will explain the production of the movements which animate them. Equally difficult is it to explain the movements of the spermatozoa.

But this contractile material, notwithstanding its different forms, is similarly affected by physical and chemical agents. Thus heat stimulates its contractility, cold diminishes it. The action of alkalies favours it, that of acids destroys it. It has therefore been supposed that the endowment of contractility resides in a substance chemically the same in all cases, but appearing under different aspects. In opposition to this supposition is the fact that the chemical composition of one muscle will vary with that of another, within certain limits—inosite, for example, is found in the muscles of the heart, while it is wanting in most other muscles. M. Marey is therefore obliged to leave the discussion of the "origin of movement" very much as he found it—unexplained, perhaps inexplicable.—*Med. Times and Gaz.*, Feb. 15, 1868.

5. *Influence of Electricity on Muscular Fibre of Vegetable Life and on Nutrition.*—M. Onimus has observed the following facts in relation to this subject. 1. *Action on the great sympathetic.* The intermittent current produces a lowering of the temperature; the continued current, on the contrary, raises it. With the intermittent current there is a tetanic spasmodic contraction of all the muscular fibres of the small bloodvessels, preventing the flow of blood. There are no corresponding effects with the continued current. 2. *Action on the intestine.* The action of the intermittent current is local; the electrified part of the intestine becomes violently contracted. The continued current produces no effect. 3. *Action on the heart.* When applied directly to the heart of cold-blooded animals, the intermittent current produces two or three contractions; the movements of the heart cease, and the auricle remains forcibly contracted. The continued current does not arrest the pulsations of the heart, the movements, on the contrary, are more frequent.—*Brit. Med. Journ.*, Jan. 25, 1868, from *Archives Gén. de Méd.*

6. *Spermatic Fluid of the Aged.*—The investigations of M. Dien, of the Invalides, gives the results of 105 autopsies of men between the ages of 64 and 97. There were no spermatozoa in 64 of the 105; that is to say, in 61 per cent. no spermatozoa were found. (Other like observations to those of the author would diminish this percentage, but they are based on observations in cases of an average less-advanced age.) Four of the author's observations were of nonagenarians; of these, none had spermatozoa. Of the 64 who had no spermatozoa, 26 died of old age. The spermatozoa, when present, are more or less abundant. In 14 cases in which the spermatozoa were not abundant, some were perfect in form, but most of them had truncated tails, whilst others, the last vestige of them, only showed the heads. If spermatozoa were absent, or almost wanting, there were other interesting peculiarities in the seminal fluid—numerous granular cells and great fatty cells, yellow coloured, like colostrum globules, and strongly refracting light. Ether being added, they disappeared. Especially when the fluid was of a dark brown-colour, there were many blood-globules, some normal, and others undergoing destruction—an evident pathognomonic sign of little hemorrhages in the *vesiculæ seminales*. There were also often rather large masses, more or less yellow, of variable shape, resisting acetic and sulphuric acids, ether and caustic potash. These were evidently masses of colouring matter, the result of hemorrhages in the *vesiculæ* of a more or less recent date.—*Brit. and For. Med.-Chir. Rev.*, Jan. 1868, from *Journ. de l'Anatomie et de la Phys.*, Sept. and Oct. 1867.

7. *On the Growth of Cells in the Blood of Animals killed by Snake Poison.*—Prof. Halford, of Melbourne, has continued his experiments on this subject. The following was the result of numerous experiments on dogs and cats. Blood soon drawn from an animal bitten by a snake contains a larger amount of nebulous or finely granular matter than is usually seen. After the lapse of one hour this nebulous matter is much increased in quantity, lying in the intervals of the red corpuscles, and presently it breaks up into small masses, out of which the cell is gradually evolved. In two hours after the bite the cells may be seen in great numbers, but very indistinct. From this time even further

microscopic observation shows them in great abundance; and from the sixth to the twelfth hour they may be seen in perfection, macula and nucleus included. Whilst this is taking place the nebulous matter disappears. The nebulous matter must therefore be regarded as the germinal matter out of which the cells are formed. At this time the cell-wall is extremely delicate, the macula very plain as a bright particle, and the nucleus either single, reniform, double, triple, or multiple. It would appear that the cells are now increasing in number by division of their nuclei, and the minute particles, having the vibratory movement of molecules in fluid, may be seen between the nucleus and cell-wall. On one occasion he watched for upwards of half an hour a constant revolution within the cell of a particle corresponding in all particulars to a macula. This particle passed regularly round the nucleus at an uniform rate, revolving both in the direction of and against the current of the fluid in which the cell was floating, reminding one of the movements seen in Valisneria, etc. Twenty-four hours after the bite, the cells attain their greatest size, and, supposing the animal then dead, have probably ceased multiplying, and are simply living, or perhaps growing, the nucleus being usually single, the macula extremely distinct, and the cell very large. It is not uncommon at this time and later to see a cup-shaped hiatus in the cell-wall from which the macula has escaped. The cells may be seen in the blood for many days, their presence seeming to be preservative against putrefaction. Where they have most room, as in the venæ cavæ, cranial sinuses, and cavities of the heart, they attain the greatest size and most circular form. In every instance the cell-wall is very elastic, and accommodates itself to surrounding pressure.

To ascertain how soon after inoculation these cells appear, is a matter of some difficulty. It is not necessary to suppose that at first they are very numerous; and, in order to detect them so early, it might require fifty or a hundred microscopes and observers at work at the same instant. Still, from their having been seen two hours after the bite, and from all we know of the rapidity with which new formations occur, both in health and disease, it is doubtless extremely soon. Of one thing we are sure; viz., that the nebulous germinal matter from which they spring is within a few minutes diffused all over the body; for, supposing an animal to die in five minutes, and hence all circulation stopped, the cells are as readily seen in its blood a few hours after death as if it had lived as many hours as we say minutes. The macula is, doubtless, a particle of germinal matter; but, whether it is to be regarded as that from which the whole cell has sprung, or whether it has been detached from the nucleus and is destined for independent existence, it is difficult to say. The fact that it is almost invariably large when the cell is small, and small when the cell is large, favours the first view. Perhaps the most important point must be left still undecided. Has the blood built up these cells, directly or indirectly, from the germinal matter of the serpent? The answer to this question the Professor would endeavour to give at a future meeting; but in either case the result was the same: Storing up of force in the new growth, at the expense of the nutritive properties of the blood, and by perversion of those chemical changes necessary to the maintenance of the life of the infected animal.

That the germinal matter exists in a state of extreme minuteness, the following experiment shows. A cat, being with young, was inoculated with the poison, and, dying in three hours, her four kittens were removed from the womb. They were dead, and the blood of all contained the foreign cells, as did that of the mother. To pass from the cat to the kittens, the germinal matter must have penetrated the delicate membrane covering the tufts of the fœtal vessels. If the poison of serpents can thus readily be traced through the body, and from parent to offspring, why should not the path of all infections be tracked? Some months ago, it was stated that it was conjectured that a child had been bitten by a snake. No doubt need ever exist for the future; a drop of blood will always furnish the necessary evidence.—*Brit. Med. Journ.*, Dec. 21, 1867.

MATERIA MEDICA, GENERAL THERAPEUTICS AND PHARMACY.

8. *Physiological and Therapeutical Action of Caffein.*—The number of the *Archives de Physiologie Normale et Pathologique* for Jan.—Feb. 1868 contains an interesting paper on this subject, by Dr. M. Leven. The following are the conclusions he draws from his experiments:—

Caffein appears to directly stimulate the heart. When first absorbed, the circulation and respiration are accelerated, the pulse is more frequent and firmer, and the secretions more active.

The central nervous system, the brain and spinal cord, and the nerves are stimulated.

The muscular system of the life of relation and that of organic life contract violently.

The muscles of the former system are affected with trembling or with general contraction. The fibres of the stomach, of the intestines, and of the bladder also contract.

At a later period after absorption of caffein, the action of the heart is lessened; the frequency and firmness of the pulse diminished; the muscular system becomes exhausted, but is not paralyzed. The nervous system also suffers exhaustion.

Caffein does not entirely extinguish reflex action, nor the functions of nerves and muscles.

It acts as a poison on different animals in different doses; it may be given to man in the dose of many grammes without injury.

It is readily eliminated from the system, and remains in it only a few hours.

He further states that caffein, like alcohol, diminishes the secretion of urea, but increases the quantity of urine excreted. It diminishes the waste of the organs, and economizes the tissues.

With two litres of coffee daily, the Belgian miners undergo, without substantial food, excessive muscular exertion. The caravans which traverse the desert are supported by coffee during long journeys and lengthened privation of food. It is known that some old persons are almost exclusively nourished by coffee.

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9. *Influence exerted by Anæsthetics on the Brain and Nervous System.*—This was the subject of a recent lecture by Dr. B. W. Richardson. The obvious fact that the motion of the heart and the movements of respiration continue in action while the rest of the body is under the narcotic effect, during anæsthesia, proves that the whole nervous system is not involved, and that the involuntary and semi-voluntary muscular mechanism is also not involved except when extreme and fatal symptoms are developed. What parts, then, are influenced by an anæsthetic? The idea was almost intuitive that the brain is the organ affected, and that the centres of consciousness are those chiefly held in abeyance. But, to prove this as true, experiment was necessary. In proof, the lecturer took a large pigeon, narcotized it deeply with chloroform, and in this state passed through its body, from the head to the foot, a rapid intermittent induction current. The bird instantly rose from the table, extended its wings, opened its eyes, and seemed as if restored; the current was then stopped, and the bird was shown to be as deeply asleep and as powerless as before. Another bird was put to sleep by freezing the brain, and when utterly insensible was subjected to the electrical shock in the same way, when it flew from the table into the room, where, breaking its connection with the battery, it dropped on the floor comatose, motionless, and as anæsthetized as before, in which condition it remained for many minutes. The lecturer in these experiments demonstrated that the anæsthetic action was localized in the cerebrum. His battery was like an outer brain, which supplied power without intelligence, and which, by the effects of its current, showed that all the muscular elements were ready for work, and only awaited the order from the brain. The lecturer next discussed the question—What, during the process of anæsthesia, leads to this change in the brain? Is there a chemical action on albumen? Is there pres-

sure on brain matter? Is there deficient oxidation of the blood? Is there contraction of bloodvessels, and diminished supply of blood from that cause? All these hypotheses were experimentally tested and negatived. It was admitted that during extreme anæsthesia there is reduced oxidation and a singular reduction of temperature. These changes are inevitable, because the anæsthetic vapours replace oxygen during their diffusion into blood; but the diminished oxidation is not the cause of the insensibility. In proof of this Dr. Richardson showed an animal breathing an air in which the oxygen was reduced by addition of nitrogen from 21 parts to 9 parts in the 100, side by side with another similar animal breathing an air in which the oxygen was reduced by the addition of vapour of bichloride of methylene only to about 20 parts in the 100—viz., 4 cubic inches in 500. The result was that the animal in the extremely reduced atmosphere was quite unaffected whilst the animal in the slightly reduced atmosphere was in the deepest narcotism. Then a correcting experimental test was adopted, and the bichloride was administered in an atmosphere containing an excess of oxygen, the oxygen being present in double its ordinary or natural proportion; the excess of oxygen exerted no perceptible obstacle to the anæsthesia. To determine whether there was contraction of bloodvessels under anæsthetics, the lecturer had had recourse to transparent small trout; through their bodies, with the microscope and the one-inch lens, the bloodvessels could be seen, and the corpuscles flowing through them. These animals can be narcotized readily by making them breathe water saturated with chloride of methylene or ether. In the narcotized condition, the vessels do not contract, but under the influence of ether, in the later stages before death occurs, dilatation and regurgitation are observed. The latter is noticed also when chloride of methylene is used. With both reagents breathing and vessel circulation cease before the heart's action. The lecturer concluded that anæsthetic vapours act directly upon nerve matter either by preventing the development of force or by stopping conduction. The latter hypothesis is supported by the fact, proved by experiment, that these vapours obstruct the conduction of heat and electricity.—*Med. Times and Gaz.*, Feb. 15, 1868.

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10. *Eucalyptus globulus as a Febrifuge.* By Dr. ULLERSPERGER.—The eucalyptus globulus is a tree of considerable size growing in New Holland, belonging to the order of myrtaceæ, and having a hard wood which is used in ship-building. It is stated that, in Barcelona and the neighbourhood, an infusion of the leaves, used like tea, has been given with the greatest success in fevers. Several intermittents were also cured, among which was a double tertain, and another case in which quinia had been given without effect. The favourable results were manifested after the first dose; and while quinia, given in the increase of the fever, only aggravated the symptoms, the eucalyptus on the other hand, taken under the same circumstances, did not aggravate, but diminished its violence. According to Salarich, who describes the tree in the "Espanna Medica," the eucalyptus grows in temperate as well as in hot climates, but not in cold ones. Besides its use in intermittent fevers, Salarich recommends it as the best anodyne in nervous headache and in other pains of the head, which are not exactly of a periodical type.—*Brit. and For. Med.-Chir. Rev.*, Jan. 1868, from *Schmidt's Jahrbücher*, Dec. 10, 1866.

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11. *Application of Iodoform to the Treatment of Cancer of the Uterus and Diseases of the Bladder and the Prostate.*—After describing the properties and mode of preparation of iodoform, and referring to the therapeutical use of this substance in England, M. DEMARQUAY gives the results of his own experience of it as a local application. He has employed it in cancer of the uterus and in diseases of the bladder and prostate. He has applied it in the form of suppository with cacao butter, which is to be placed in the rectum in the case of diseases of the bladder or prostate, or in the vagina, in contact with the diseased mass, in the case of carcinoma or epithelioma of the uterus. A plug of cotton, placed at the entrance of the vagina, will prevent the substance from running out. When the cancer has formed a cavity, the remedy must be placed in the midst of it, in order that the diseased structure may be well exposed to

its action. Patients affected with inflammation of the prostate and the neck of the bladder reported themselves as somewhat improved by this plan of treatment, but M. Demarquay does not consider the results as altogether satisfactory. In cases, however, of ulcerated cancer of the neck of the womb, the improvement has been more decided. The application of iodoform has relieved pain, without disturbing the organic functions, and the improvement has continued as long as this agent was employed. The same improvement was observed in some cases of ulcerated cancer of the rectum, but M. Demarquay observes that, in certain instances of inflamed uterine cancer, the suppositories produced so much pain that they were necessarily discontinued. The iodoform is, therefore, not applicable in all cases, but in suitable conditions it is very useful, being very superior to opium as a local sedative, the iodine it contains producing its constitutional effects, while the organic functions, and especially the digestive, are undisturbed.—*Brit. and For. Med.-Chir. Rev.*, Jan. 1868, from *Bull. Gén. de Thérap.*, May 15, 1867.

12. *Dr. Richardson's Styptic Colloid.*—Dr. John Lowe, Surgeon to the West Norfolk and Lynn Hospital, has published (*Med. Times and Gaz.*, Jan. 25th, 1868) his clinical experiences with this application. He says: "The styptic has been largely used in our hospital in a variety of cases, and invariably with the best results. I have as yet never seen it fail to answer the ends for which it was designed. In old chronic ulcers, foul-smelling and filthy to a degree, the odour is at once destroyed, and healthy granulation established. Most markedly was this the result in a case of my colleague's. The patient, a young sailor, who had been long at sea, was admitted with a number of very large syphilitic ulcers on both legs, the stench from which made the ward unbearable. They were freely painted over with the 'colloid,' and in a very short space of time the odour was all but gone. They healed most rapidly.

"In cancer of the penis, too, it is most serviceable in removing the odour and in mitigating pain. Nothing could be more striking than its action in this respect in the case of cancer of the breast which I have reported above.

"In conclusion, I may state that erysipelas is, with us, to all appearance, a thing of the past. Some time ago, owing to imperfect sanitary arrangements, almost every surgical case in the hospital was attacked with erysipelas, and several died of pyæmia. Some improvement was effected in the hygienic condition of the hospital, but it is still imperfect. Latterly, however, since using the tincture of iodine to the surface of the wound and styptic colloid externally, there has not been a single case of either erysipelas or pyæmia, and the cases generally remain a very much shorter time on the books. There is no doubt that the colloid is an expensive application, and that it causes a serious expense to the hospital; but I consider that the gain from the rapid cure of the cases under treatment largely overbalances the original outlay; and not only is the expense diminished by the shorter duration of the cases, but, owing to the absence of septicæmia, there is a greatly reduced need of stimulants and extras."

13. *Use of Counter-Irritants.*—Prof. Hebra, the celebrated dermatologist, declares his opposition to the use of counter-irritants (revulsives), which form so large a part of ordinary medical practice. He professes to show that the theory by which their use was originally suggested and is now maintained, is erroneous; and he brings forward clinical and experimental facts and arguments to demonstrate the evils which result from the practice. Physicians were, he maintains, led to adopt counter-irritants for the cure of internal diseases, by observing the alterations and apparent antagonism of cutaneous affections and internal lesions. When, for example, a patient, the subject of a skin disease (as psoriasis), was attacked by fever, the chronic cutaneous eruption was observed to fade and disappear while the febrile state lasted, but reappeared during convalescence. Again, in exanthematous fevers the febrile symptoms often subside on the appearance of the specific eruption; and, moreover, the eruption continues fully out only under a favourable condition of the internal affection; while, on the contrary, if the internal symptoms are aggravated, the cutaneous eruption diminishes, and, before a fatal issue, becomes altogether invisible.

Hence the popular idea among physicians and the laity, that the suppression or metastasis of the cutaneous affection is the cause of the fatal issue of the general disease. But these opinions are erroneous, for the chronic skin disease does not vanish first, to be replaced by the fever; but, on the contrary, the dermatosis only begins to fade after a prolonged continuance of an intense febrile state. In like manner, in every general disease of great intensity and prolonged duration, the anæmia which supervenes is first noticed on the skin, and hence the fading and disappearance of red eruptions in these cases, since even syncope will cause their temporary vanishing. Another erroneous opinion, prevalent from ancient times till the present day, which probably lent support to the use of counter-irritants, was the idea that every disease consisted of something material, which attacked sometimes one part, sometimes another, and which it was the physician's chief aim to eliminate; hence the terms *materia peccans*, acrimonies of the blood, acids, phlegm, black and yellow bile, etc. These notions, in spite of modern pathology, still retain their influence on practice. It is, however, certain, that we cannot judge of the use of remedies on such grounds, but only by a knowledge of the action of the remedy on the healthy body on the one hand, and an acquaintance with the natural course of disease, uninfluenced by remedies, on the other. This was first stated by Gideon Harvey, in his work, "Ars Curandi Morbos Expectatione, Amstelodami, 1695," where he says boldly that "it would be proper to write on the patient's prescription only the word, *Expecta*." But this expectant method seemed a neglect too cruel to be practised in dangerous diseases, until Hahnemann showed that fevers and inflammations were often as successfully treated by decillionths as by the Hippocratic apparatus of venesections and counter-irritation; whereupon physicians and clinical professors, convinced of the real nothingness of decillionths, resorted to the treatment of febrile and non-febrile diseases by the pure expectant method, and were thus enabled to study accurately the natural course of disease. Wherever their results were as successful as the older heroic practice pursued "lege artis," it was obvious that the latter was at least unnecessary, that the cure was done by nature in spite of heroic remedies: "Natura et morbum et medicum vincit." Nevertheless, some practitioners, who admit all this in regard to certain diseases, plead for counter-irritants to the skin in the class of affections called *rheumatism*, believing that the peripheral irritation will relieve the deeper seated parts. But how often do these remedies, from simple rubefacients up to the "horrible invention of the moxa," fail; so that where cases improve, it is rather *during* than *by* the treatment. An impartial examination would show that as many rheumatic affections get well under homœopathy, hydropathy, electricity, or the plasters of quacks, as under counter-irritants.

Moreover, the excuse that it is necessary to do something to relieve suffering, and that blisters, etc., do no harm, is incorrect, as they often leave indelible marks on the skin, while hot and cold douches, lotions, liniments, and plasters do not, and yet afford as much relief. In diseases of the eye, also, the applications of leeches and blisters, which were formerly always used, are now condemned by many ophthalmologists. Clinical experiment in Hebra's practice gave similar evidence. Suppose on the thigh of a patient an eczema rubrum of the size of a crown-piece; place at two inches distance on one side a blister of the same size, on the opposite side a sinapism, and at the two other poles, tartar emetic ointment and croton oil. The artificial irritants will produce here bullæ and redness, there pustules and vesicles, but without at all diminishing the intensity of the central eczema. On the contrary, the latter often spreads to and includes the irritated surfaces, and becomes larger than before. Now, if in the same organ or tissue (the skin) a peripheral irritant cannot draw away and dispel a central affection of a similar kind, how can cutaneous irritation be expected to dissipate the morbid condition of the pleura, lungs, brain, peritoneum, eyes, sheaths of nerves, etc.? What new path do revulsives open up for the elimination of morbid products deposited in these cavities and organs? But cutaneous irritants, continues Prof. Hebra, are not only useless, but often do harm, and their pernicious effects may either last long, or even put life in peril. It is, for instance, a well-known fact that the exanthemata, smallpox, measles, and scarlet fever, are more fatal in proportion to the intensity and

amount of the cutaneous eruption. And experience teaches that the eruption is more abundant on parts of skin where an irritation or dermatosis (*e. g.*, an eczema) previously existed. A sinapism, applied to the chest on account of dyspnœa, will cause a larger amount of pocks to appear there, and if there were a counter-irritant large enough to cover the entire integument, a simple varicella might be converted into a fatal variola. Indeed, even the irritation of cold water in excess, applied hydropathically around an eczema, will cause its extension over the whole skin; and often the abuse of acaricidal remedies—*e. g.*, the sulphur fumigations in vogue a few years ago—produces a horrible eczema over the whole external surface; often hot baths, pushed by some as an infallible remedy, diffuse instead of arresting a skin disease. The tartar emetic ointment, applied to the scalp in chronic hydrocephalus, causes no diminution of the effusion, while the pustular eruption is very painful, and may give rise to purulent absorption and erysipelas. A blister behind the ear is often the starting point of an eczema which affects the concha, the face, and hairy scalp, and which, under unsuitable treatment, may last for years, causing great pain, as Hebra has often seen, without improving an ophthalmia in the least. Leech bites on the temples are followed by incurable white triangular cicatrices, which certainly are no ornament to a pretty face. The marks of cupping, too, on the neck and arms of women, are often a serious disfiguration. Issues in the arm to prevent relapses of ophthalmia, or of cerebral congestions, or as derivatives from skin diseases, are not only useless for their intended purposes, but are very troublesome and frequently become the source of eczemas which spread over the surrounding integument. Even the discolorations which sinapisms leave behind, entail a lasting defect when applied to the neck or chest in females. Sometimes, indeed, a fatal result may be caused through the application of counter-irritants in typhoid fever, pneumonia, or smallpox, in consequence of the blistered surface being the seat of *cutaneous diphtheria*. The tinct. of arnica, introduced by homœopathists, if diluted, as they use it, is harmless; but if applied in a concentrated form, it causes redness and swelling of the skin, which in sensitive individuals develops into an eczema which spreads over a large surface and even the whole skin, and requires months to heal, confining the patient to bed for a longer period and a worse condition than the affection would have done for which the arnica was administered. Many of these artificial skin eruptions, bullous, vesicular, and pustular, do not cease when the counter-irritant which caused them is removed, but last for weeks, months, or years. They can then no longer be distinguished from the idiopathic skin diseases, eczema, pemphigus, ecthyma, impetigo; and were the common theory true of the protective influence of counter-irritation, these skin diseases ought to afford a security against internal diseases in proportion to their amount. In that case, no persons should be healthier than the subjects of general chronic pemphigus, which should afford means of eliminating all kinds of peccant matters from the system. On the contrary, however, experience teaches that exudative eruptions covering large surfaces, especially in the form of vesicles, blebs, or pustules, not only exhibit no preservative power, but the reverse, exerting a disastrous influence on the general health, and becoming a frequent source of fatal issues. *Lazarus* was always regarded as a collection of all kinds of diseases, requiring providential intervention for his cure! Veterinary art exhibited similar prejudices till a few years ago. Diseased animals, especially horses, used to be tortured with all kinds of cauteries and corrosives; and farriers were in repute with the ignorant in proportion to the cruelty of their treatment. But thanks to the heads of the medical department in the Veterinary Institute of Vienna, such practice is now obsolete there, and results equally satisfactory are now obtained by the expectant method as were formerly got by those cruel manœuvres. Veterinarians, in this respect, according to Hebra, might serve as a model for physicians. "It would be desirable," he says in conclusion, "that every physician, before applying a counter-irritant to his patient, should ask himself the question, whether, if he were ill, he would treat himself in the same way? Indeed, it has rarely happened to me to see physicians who would have subjected their own persons to the application of issues, moxas, and setons. Yet, let not the physican forget the commandment, 'Do not that to others which you

would not have done to yourself,' when, at the bedside of his patient, he finds other remedies unavailing, and is tempted to have recourse to epispastics as his last resort. He ought always to remember that his mission is to relieve pain, and wherever his attempts to do so fail in spite of all his efforts, he can console himself with the assurance that he has at least caused no superfluous suffering."—*Edinburgh Med. Journ.*, Nov. 1867, from *Allg. Med. Zeit.*

The editor of the *Edinburgh Journal*, while justly remarking that he cannot altogether agree with the Professor, justly remarks: "Humanity demands that remedies should be as painless as possible, provided they be effectual; but it is, above all, essential that they be effectual. A do-nothing practice cannot last: it is a transition period only; but close observers will perceive that modern medicine is passing beyond the stage of expectancy, which was necessary to found a natural history of disease, and that while the means employed will be fewer and simpler—often less heroic in appearance, but really more potent than the older therapeutics—they will be administered with immensely greater, because with scientific precision, and with almost certain benefit. But the problems of medicine require time and labour to be worked out, even with the abundant energy of a modern age; and till they are worked out, some amount of expectancy and of prudent empiricism is necessary, and is, even now, infinitely more successful than blind and rash routine or a random prescription of new remedies. Fortunately, in spite of erroneous current theories, judicious physicians have existed in all ages. Meanwhile, free questioning of remedies, in a proper scientific spirit, can only end by establishing what is excellent."

MEDICAL PATHOLOGY, SPECIAL THERAPEUTICS, AND PRACTICAL MEDICINE.

14. *Changes of the Capillaries in Cerebral Softening.*—MM. PREVOST and COTARD demonstrate that, if granulo-fatty degeneration of the capillaries and their aneurismal dilatation may and should, in a certain number of cases, be considered as the primary lesion which acts as the producing cause of softening of the brain, these same vascular alterations may be secondary, and depend, like the concomitant alteration of the nerve-tissue for instance, on arterial obliteration. They appear, also, to be capable of secondary production, whatever may be the producing cause of the necrobiosis of the nerve-tissue.—*Brit. Med. Journ.*, Jan. 25, 1868, from *Archives Gén. de Méd.*, Jan. 1868.

15. *Pathology of Locomotor Ataxy.*—In the *Transactions of the Biological Society of Paris* for 1866, we find an interesting observation made by MM. CHARCOT and BOUCHARD, who decide what are the medullary lesions of the commencement of locomotor ataxy. In a case where the patient presented only the premonitory symptoms, and where the acute pains of the ataxy were present without disturbed co-ordination of movements, the autopsy revealed commencing induration of the posterior columns of the spinal cord (conjunctive neoplasia of the posterior columns with integrity of the nerve-tubes). This observation furnishes an argument against the opinion which tends to rank locomotor ataxy amongst the neuroses, and to consider the sclerosis of the posterior columns as a lesion consecutive to the functional disorders of that portion of the cerebro-spinal axis.—*Ibid.*

16. *Albuminuria in a Child Seven Weeks Old.*—Mr. G. F. HELM records (*Lancet*, Jan. 18, 1868) a case of this. The child was a fine one when born, but was afterwards troubled with almost constant vomiting. The mother having no milk, the child was fed by hand. It became extremely emaciated, no kind of food agreed with it, and it died when about eleven weeks old.

Mr. H. thinks it was a case of albuminuria from imperfect digestion and assimilation of the albuminous constituents of the food; for, though the kid

neys presented, at the autopsy, some spots of congestion, they could not be considered as diseased.

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17. *Action of Putrid Material on the Animal Organism.*—The following conclusions have been derived by Dr. Moriz Hemmer, of Munich, from his researches on the nature and action of putrid fluids. 1. Putrid infection causes severe acute inflammation in the intestinal mucous membrane and the glands of the chylopoietic system. 2. It excites very violent central irritation. 3. By it the blood is changed into a dark-coloured, thin, and scarcely coagulable fluid. 4. It causes the rapid approach of putrefaction. 5. The putrid poison is an albuminoid body undergoing change, not fluid or gaseous, but solid. 6. The poison acts in imperceptibly small doses; and, with regard to its intensity, can be compared only with the most active toxic agents known to us—some vegetable alkaloids, curare, the snake poison, etc. 7. It is insoluble in absolute alcohol, soluble in water. 8. It resists a heat of 100° centigrade. 9. It acts as a ferment, and induces zymotic changes in the blood. 10. The action of the putrid poison is exerted on the albuminoid materials of the plasma of the blood. 11. An analogy may generally be recognized between putrid infection and the infectious diseases. 12. The morbid material of the infectious diseases are, therefore, putrid poisons, and possess the properties of the same. 13. The varying action of the morbid materials in the infectious diseases depends upon a special modification of the putrid poison.—*Brit. Med. Journ.*, Dec. 28, 1867, from *Blatter f. Staats-Arzneikunde*, No. 29, 1867.

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18. *Infusoria in the Air expired in Whooping-Cough.*—On April 2d, 1867, M. Poulet addresssd to the French Academy of Sciences a note on this subject. On the 5th of August last he sent to the same learned body an account of some subsequent observations made by him. He states that an epidemic of whooping-cough in the place where he resides afforded him the opportunity of examining the breath of many children affected with the disease, and that in the vapour collected by the method described in his previous communication, he found, on microscopic examination, a world of minute infusoria, which were in all cases identical. The most numerous, as well as the most minute, belonged to a species described by some under the name of *Monas termo;* by others *Bacterium termo.* Another species, found in smaller numbers, were the *Monas punctum* of Müller, *Bodo punctum* of Ehrenberg, and which are usually classed among the Bacteria, *Bacterium bacillus.* Thus he says that whooping-cough by the alterations of the expired air, belongs to the infectious diseases among which he has already studied under the same point of view, smallpox, scarlatina, and typhoid fever.—*Gazette Hebdomadaire de Méd. et de Chirurg*, Aug. 16, 1867.

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19. *Lung showing the early stage of Cirrhosis.*—Dr. Bastian presented to the Pathological Society (London) a specimen of this taken from a man admitted into St. Mary's Hospital. The patient was moderately well nourished, and had been suffering from cough for many years, though he had been seized with symptoms of acute bronchitis only two days before admission. There was flattening of the chest anteriorly on the left side, and marked dulness over a great portion of this half of the thorax, whilst on the opposite side there was no dulness, but signs of recent bronchitis. There was great lividity of the face, and the man died after two days from the severity of the acute attack. Post-mortem: The upper part of the left lung had to be cut out of the thorax, owing to adhesions and the formation of a tough material of fibro-cartilaginous consistence at the surface, nearly one inch thick in some parts. Almost the whole of the upper lobe was dense and hard, being intersected in all directions by bands of white fibrous tissue. The lower lobe was also somewhat consolidated and indurated by new fibrous tissue. In the upper lobe there were a few dilated bronchi. No tubercle existed in this lung. The opposite lung also contained no tubercle; it was large and healthy, save that it presented all the appearances characteristic of acute bronchitis. Not a particle of tubercle in other organs of the body. Dr. Bastian had collected and analyzed thirty cases of this rare

disease. Two or three of these had been reported under the head of "dilated bronchi," and one or two others as cases of chronic pneumonia. He had found, from statistics furnished by Lebert and Barth, that by far the greatest majority of cases of dilated bronchi occurred in individuals who were over 60 years of age, whilst a very large proportion of the cases of cirrhosis of the lung occurred between the 16th and 40th year. Dilatation of the bronchi was an accident rather than an essential in cirrhosis, and either did not occur, or was very slightly marked, in one-third of the cases. With regard to chronic pneumonia, he was convinced, from the descriptions of Grisolle and Charcot, that the pathological condition to which they applied this name was in some cases the immediate sequence of an acute pneumonia, and, moreover, that the tissue change met with was precisely similar to that occurring in the early stage of cirrhosis. But inasmuch as in this condition the whole lung substance was infiltrated with a new fibre growth, its anatomical character was totally different from that of pneumonia, and therefore the name which had been hitherto given to it was altogether unsuitable. It was not a persistence of the anatomical characters of the acute disease, but the setting up of an entirely new process, merely a sequence of the original disease. Whilst Dr. Bastian believed, therefore, that the disease was usually a chronic one, in which a growth of new fibre tissue gradually took the place of the proper lung substance, he believed that in certain rare cases its onset might be more acute, and be the immediate sequence of an acute pneumonia.

Dr. Bastian fully recognized the importance of a due consideration of the relationship of this pathological condition to the indurations of lung tissue met with in phthisis. His attention has been particularly directed to this question because some pathologists refused to recognize cirrhosis of the lung as a distinct disease on the ground that all the so-called cases were instances of tubercular phthisis advancing to a cure. He knew how frequently fibroid induration of the cirrhotic kind was associated with tubercle, but he felt convinced that in certain cases pure cirrhosis might exist in individuals who were in no way tuberculous. In fact, his observations confirmed those of Dr. Sutton to the effect that persons suffering from this disease often had originally possessed large well-formed chests, and a physique the very reverse of that usually looked upon as phthisical. Of the 30 cases analyzed by Dr. Bastian, in only four was there any evidence of the existence of tubercle in one or other lung, and then it occurred in quantity altogether insignificant, so as to make its presence rather an accident than an essential.—*Med. Times and Gaz.*, Nov. 23, 1867.

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20. *Intermingling of the Types of Fever.*—Dr. HENRY KENNEDY read before the Medical Section of the British Medical Association, at its meeting in Dublin, in 1867, a paper on this subject, in which he expressed his strongest convictions that the types of fever "are much more mixed up—intermingled, as it were—than is commonly supposed, or the books teach. He states "that while the types of fever may all usually be distinguished the one from the other, yet they are frequently conjoined, or glide the one into the other. I cannot doubt that this is the case as regards gastric and enteric fever; neither can I doubt that the relapsing fever and typhoid may coexist. I believe, too—and here I would wish to speak with much more reserve, on account of the many able physicians who differ from me—that I have often had to treat cases of typhus and typhoid conjoined."

There are two points which appear to him worthy of especial notice. "In two cases within the last year, the treatment adopted to check the diarrhœa of enteric fever proved somewhat too potent; but what was the effect on the patients? It literally changed, as I believe, the very type before my eyes; and what had begun with all the signs of enteric fever ended literally in typhus. In each case, the diarrhœa (and I may state, in passing, the discharges were most characteristic) suddenly ceased, and the brain became seriously engaged."

The second point "is the fact that in those cases of fever where, as I believe, typhus and typhoid coexisted, the duration of the attack was much longer than if the disease had been typhus alone, by a period of at least ten days. In other words, the attack, as far as duration went, occupied the number of days which

enteric fever usually runs—that is, five or six-and-twenty days. This fact appears to me one of moment, as showing, as far as the nature of the subject admits, that a something was present in these cases which prevented the attack ending in fourteen or fifteen days, which is the common course of typhus; and that these cases partook of this character, was proved by the presence of a copious petechial rash. I must leave to those who hold different views from my own the explanation of this fact."—*British Med. Journ.*, Jan. 18, 1868.

21. *Zymosis—A new Antiseptic Salt.*—Dr. SANSOM, in a paper read before the Medical Society of London, gave an outline of the theory of zymosis. In tracing the origin of infecting particles, we, may, he said, divide them into two classes—First, those arising from the animal world, such as variola, vaccine, pyæmia; and secondly, those arising from the vegetable world, as favus, thrush, and, if we are to believe a large mass of scientific evidence, diphtheria, ague, &c. But whether animal or vegetable, it cannot be determined with accuracy whether the materies morbi is, at the period of infection, one or the other. It is best, under such circumstances, to call it "germinal matter." Dr. Sansom then related a series of cases which had occurred in his practice, all of which were united by close relations of time, place, and circumstances, and in one of which the "oidium albicans" was discovered as a prime factor in the disease. The author then discussed the operation of disinfectants. He divided them into three classes—First, those which alter the chemical constitution of the materies morbi, such as chlorine and iodine; secondly, those which act partly chemically and partly vitally, such as the sulphites; and thirdly, those which act only on organized material, arresting vitality, such as carbolic acid. The treatment of zymotic disease by the internal administration of the sulphites was then considered, and forty-one cases were brought forward in which they had been employed, and in which one death only occurred. The facts seemed to be that the sulphites are the most easily absorbed of our internal antiseptics, but that carbolic acid is the most powerful. The author concluded by saying that the great desideratum was a salt which should combine the two. This desideratum Dr. Sansom had succeeded in fulfilling, and specimens of compound salts, the sulphocarbolates, were exhibited to the Society.—*Med. Times and Gaz.*, Feb. 22, 1868.

22. *On Excess of Urea in the Urine as a guide to the Diagnosis and Treatment of certain forms of Dyspepsia and Nervousness.*—Dr. FULLER read before the Royal Medical and Chirurgical Society (Nov. 26, 1867) a paper on this subject. He began by stating that, in the year 1864, his attention was arrested by the existence of a great excess of urea in the urine of a patient whom he was treating for dyspepsia, accompanied by strongly marked nervous or hypochondriacal symptoms. The amount of urea in a given bulk of urine was so great that, on the addition of nitric acid, crystals of nitrate of urea began to form in about twenty minutes, and ultimately filled the interior of the test-tube. This condition of the urine has never been described as a feature either of dyspepsia or of nervousness; and as, from its persistency in the case under observation, Dr. Fuller was inclined to regard it as an essential feature of the malady, he resolved in future to search for urea in the urine of every patient who presented a similar train of symptoms. The result has been that he has discovered an excess of urea in twenty-seven patients; twenty-six of whom were males, varying in age from twenty-three to fifty-four. After describing the general symptoms by which this condition of the urine was accompanied, Dr. Fuller gave the details of two well-marked cases; and stated that since his attention had been directed to the subject he has seldom been disappointed in his expectation of finding an excess of urea when the symptoms have led him to suspect its existence. Without exception the patients have been tolerably healthy in appearance, and often somewhat florid, though in some instances they have lost flesh slightly—indeed, their aspect has been so little indicative of disease, and their complaint of suffering has been so constant and so urgent, that any practitioner who did not examine the urine for urea could scarcely fail to regard them as simply hypochondriacal. Their complaint has been of flatulence and acidity, extreme languor, restlessness at night, and distressing nervousness.

Even a moderate amount of exertion has induced fatigue, so that they have abstained almost wholly from exercise. This last Dr. Fuller regarded as an important feature of the complaint, inasmuch as it bears upon the point which was next discussed—namely, the source of the excess of urea. He maintained, by reference to the history of the cases and to the marked indisposition to and incapacity for exertion, whether mental or bodily, manifested by sufferers from this complaint, that the urea is not formed, solely at least, during the destructive processes of assimilation as a consequence of the wear and tear of the tissues—the source whence urea is commonly supposed to be derived—but is due to the production of urea from the elements of the food during the primary processes of assimilation, probably as a consequence of perverted nervous action. In conclusion, Dr. Fuller mentioned several circumstances which induced him to believe that this affection is nearly allied to gout.—*Med. Times and Gaz.*, Dec. 14, 1857.

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23. *Intermittent Pulse and Palpitation.*—Dr. B. W. RICHARDSON concludes an interesting lecture on this subject with the following practical precepts:—

"There is, of course, no known specific for intermittent heart, but, whenever the symptom of intermittency is present, there are certain general lines of treatment which should always be enforced by the physician.

"1. In the case of young children, when the intermittency is clear, however infrequent it may be, the utmost care should be taken to avoid every source of mental excitement. A child so circumstanced should, under no pretence and for no purpose, be oppressed with study. He should be subjected to no amusements which powerfully excite the mind; he should at no time be exhausted by physical fatigue; he should be well fed, warmly clothed from head to foot, and, above all things, should be allowed to have abundant sleep. Ten to twelve hours' sleep is not a whit too much. Moreover, such a child should never be put to sleep with stories which excite dreams or cause alarm.

"2. In adults equal care should be taken, and, above all things, attempts should be made to remove impressions derived from any untoward event. Change of scene in this way often proves of essential service, while a carefully regulated diet, abstinence from exhausting pleasures, and abstinence from exhausting labour, especially mental labour of one particular kind, should be encouraged. Good sleep is here again the most valuable of remedies. Eight hours of sleep out of the twenty-four are essential—nine are still better. Two special points of advice are of vast moment to such persons. It not unfrequently happens that, by accident or by direct information, they learn the fact that their pulse does intermit. Then they begin to feel their own pulse, and become charged with dread of sudden death. As the disorder is of itself cerebral, this watchfulness and fear increase the frequency of the intermittency. With these patients, a word from the physician timely and firmly spoken is often the best prescription. You assure them on your experience that their malady is not of necessity fatal; you command them not to inquire after the symptom, and if you can succeed in persuading them to your views, which you may honestly try to do with all your influence, you will effect the most marked improvement in their condition. Again, it sometimes happens that patients conscious of the failure of the heart resort to alcoholic stimulants as a means of relief. For a moment, by exalting the cerebral activity, they experience relief from the alcohol, but the depression that follows calls the more rapidly for a return to the supposed remedy, and a factitious benefit leads to a habit which excites structural changes, and, of all things, hastens death.

"3. In case of sudden intermittency with symptoms of cerebral congestion, depletive measures are sound. A purgative is essential, and blistering at the back of the neck is always useful. I have seen great advantage in these cases from abstraction of a moderate quantity of blood by the cupping glasses.

"4. In the extreme forms of cardiac intermittency, while all the general rules laid down in Nos. 1 and 2 hold good, it becomes often imperatively necessary to subdue cerebral excitement, and to induce cerebral rest. For this latter purpose, opium is the sheet anchor. It must be given freely when it is given, and not too frequently. Small and repeated doses of opium excite, depress,

and give no rest. A full dose, equivalent to a grain or even two grains, on the contrary, produce no excitement, but gives sound sleep, and that quietude of cerebral circulation which is essential to secure satisfactory relief. I have sometimes, where there was much depression, combined full doses of opium with full doses of quinia, and with marked benefit.

"5. Concerning old people who suffer from what may be called chronic intermittency without oppressing symptoms, no special rule requires to be laid down. They are themselves usually too tired of the excitements of life to care for them, and if they are not, then the observance of the general principles applicable to children and adults extends equally to them."—*Med. Times and Gaz.*, Jan. 18, 1868.

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24. *Peroxide of Hydrogen as a Remedy in Diabetes.*—Dr JOHN DAY records (*Lancet*, Jan. 11, 1868) a case of diabetes which had resisted all ordinary treatment for three years, and which is now rapidly yielding under the influence of the ethereal solution of the peroxide of hydrogen, given in half-drachm doses mixed in an ounce of distilled water, three times a day.

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25. *Arsenic in Phthisis.*—In a paper recently read at the Academy of Medicine, M. MOUTARD-MARTIN arrives at the following conclusions: 1. Arsenic exerts a very positive action in pulmonary phthisis. 2. It is more efficacious in the slow and torpid form than in that which is accompanied by fever. 3. Rapid phthisis and the acute granular form undergo no modification under it. 4. In a great number of cases, even in advanced phthisis with hectic, the general condition of the patient is ameliorated, at least for a certain time, which may long continue. 5. The modifications in the local lesions are only produced at a later period. 6. In a certain number of cases a cure results, and these would be more numerous if the patients had more perseverance instead of too soon believing themselves cured. 7. In order to prove efficacious, the treatment must be long continued. 8. The quantity taken daily need not exceed two centigrammes. 9. The arsenic is tolerated best in the early stages of the disease. 10. When not carried beyond the quantity stated, the tolerance may be almost indefinitely prolonged. 11. The action of the arsenic is primarily corroborant, acting secondarily on the pulmonary lesion.—*Med. Times and Gaz.*, Jan. 18, 1868, from *Union Méd.*, No. 3.

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26. *The "Vaporarium" as a Means of Treating Phthisis Pulmonalis.*—Dr. FELIX BRICHETEAU strongly recommends to the attention of physicians the application of the "vaporarium" in the treatment of phthisis pulmonalis. The honour of first proposing and testing this method appears to be due to Professor Trousseau, whose recent death we all unite in deploring. Drs. Galliet and Henri Henrot have since employed it in several cases of phthisis, as well as in various chest and throat affections, and from their experience the greater portion of the evidence in its favour is derived. It is scarcely necessary to explain that the "vaporarium" is a chamber filled with the vapour of water, in which the patient constantly resides for a more or less extended period. To obtain a warm and moist atmosphere, two plans are recommended. The first is applicable to hospitals, and to such establishments as possess the convenience of steam-pipes. To one of these a tube is attached, that leads to a chamber in which is placed a trough of considerable depth, and with a large exposed surface. This tube is made to enter the bottom of the trough, and the steam thus passes through the contained water, and causes the required evaporation.

The second method may be used in the absence of steam-pipes. It consists essentially of a small boiler, heated by a gas or other lamp, and having a tube to conduct steam into the lower part of a trough containing water, from the surface of which a rapid evaporation of warm water is thus caused.

For a room of ordinary size, a trough one yard and a half long, and about ten inches deep, is sufficient; and with this a temperature of between 74° and 80° Fahr. may be readily maintained.

As yet the experience with the "vaporarium" has not been extensive. Three cases of confirmed phthisis have been perfectly cured; two inveterate (opini-

âtre) cases of the same disease have been relieved; one case of croup was rapidly cured; and one of œdema glottidis, which had resisted all other means, was cured in a few hours. Details are given of several of these cases, and from the description of the physical signs, there can be no doubt as to the genuineness of the phthisical affection.

In a few instances, patients derived no benefit from their abode in the "vaporarium." Among these were suffers from very advanced phthisis, and the greater number of those treated for croup.

Dr. Bricheteau, with apparent justice, ascribes the value of the "vaporarium" to the convenience that it affords of imitating a warm and moist climate. It places at our disposal a constant temperature and an atmosphere loaded with moisture; and a room may easily be constructed in large dwelling-houses or in hospitals where such a warm and moist atmosphere as is so advantageous to a large class of patients may be constantly maintained. In addition, the air of the chamber may be impregnated by medicinal substances, such as sulphurous acid, tar, carbolic acid, or iodine, if these be placed in the trough of water through which the steam passes.—*Ed. Med. Journ.*, Jan. 1868, from *Bull. Gén. de Thérap.*, July 30, 1867.

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27. *Phosphorus in the Treatment of Paralysis.*—M. DELPECH has obtained the best results from the employment of phosphorus in paralysis. There are at present three cases in his ward submitted to this mode of treatment. In one case the disease had been brought on by the prolonged employment of sulphide of carbon; in another, by the effects of cold; and in the third, by an attack of apoplexy. The phosphorus acted at first as an aphrodisiac, producing erections, and thus manifested its peculiar action on the genital organs; mobility and sensibility were then favourably modified, without any apparent inconvenience attributable to the employment of the remedy.

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28. *Bromide of Potassium in Whooping Cough.*—Dr. DE BEAUFORT has observed, in the course of his practice, that the use of bromine was attended with very good effect in the treatment of hooping-cough, and he anticipated such a result. For, according to his view, the principal symptomatic phenomenon which distinguishes hooping-cough from a simple catarrh, is the exaltation of sensibility in the laryngeal mucous membrane, especially towards the upper orifice of the larynx. This hyperæsthesia excites, by reflex action, the convulsive cough and the contraction of the larynx, and consequently a medicine like the bromide of potassium, which exerts such a remarkable anæsthetic action ought to arrest the principal symptoms of hooping-cough, and to reduce the disease to its catarrhal element. The bromide, in the hands of Dr. De Beaufort, rapidly produced the desired effect, and in twenty cases, taken at different periods of the disease, laryngeal spasm was found to disappear in five days on the average, and the disease was converted into a bronchial catarrh. The patients, however, were not cured, but their condition was altered; there was no more anxiety or vomiting, the appetite was improved, the nutrition was better, and the strength was increased. Such a rapid result was very satisfactory, but Dr. De Beaufort desired to complete the cure, and he therefore endeavoured to find some other medicinal agent, which might effect, in combination with the bromide, what the latter was insufficient to accomplish alone. The substances which he found most efficacious were *aconite* and the *Balsam of Tolu*, and he publishes a formula in which the syrup of balsam of Tolu, bromide of potassium, and an alcoholic preparation of aconite are combined together. By the aid of these three remedies he has seen hooping-cough cured in twelve days on the average.—*B. and F. Med.-Chir. Rev.*, Jan. 1868, from *Bull. Gén. de Thérap.*, May 30, 1867.

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29. *On the Solvents of Pseudo-Membranous Exudations and on the Employment of Bromine in those Diseases.*—Dr. CH. OZANAM, formerly librarian to the Academy, in a memoir published in the number of *Revue de Thérapeutique Médico-Chirurgicale*, for January 1, gives an account of his experiments with various articles made with a view of ascertaining the best solvents for diphtheritic exudations. The one which effects their solution in the shortest time—

even in a few minutes—is the amoniuret of copper (liquor of Schwitzer). This liquor may be given in doses of from two to twenty drops during the day in one or two glasses if for an adult; it cannot be given to children on account of its very bad taste.

He prefers, however, an aqueous solution of bromine in the proportion of one drop in twenty-five to thirty grammes (about an ounce) of pure water. It must be kept in a well-ground glass-stoppered vial and in the dark, and when it loses its amber colour it should be renewed. This solution is to be given in drops every hour, in as many teaspoonfuls of sweetened water so as to give one or two grammes (thirty-six grains) of the solution in the twenty-four hours. When well sweetened, children take this without difficulty.

Dr. Ozanam also gives the bromine in fumigation in the following manner: He takes a bowl of boiling water and places over it a funnel of glass or of paper. He puts into the water a large pinch of bromide of potassium or of common salt, and afterwards adds gradually two or three times within the space of from five to ten minutes a teaspoonful of the bromine water. The patient must inhale slowly and deeply the vapour which mixed with the steam of the water does not produce any irritation.

Dr. Ozanam asserts that he has cured by this simple method more than one hundred and fifty cases of membranous croup. Up to the period of his writing he had failed in not more than four or five cases; and these were cases of membranous croup.

While he recommends this as the principal remedy, other means which may seem to be called for should not be neglected.

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30. *External Use of Digitalis in Suppression of Urine.*—Mr. J. D. Brown records (*Med. Times and Gaz.*, Jan. 25, 1868) six cases of suppression of urine treated by the external use of digitalis. He used the leaves, bruised and warmed in boiling water, as a poultice, and also the tincture of the plant mixed with a warm flaxseed poultice and placed on the abdomen.

He reports these cases, he says, "with the object of calling attention to the effect of digitalis in that dangerous disease, and of inducing the medical world to give it a trial. It is not supposed that it will succeed in all cases of that mysterious disease; but it is clear that it has a powerful influence over the renal secretions, and if carefully watched, taking the pulse as a guide, no mischief need be feared.

"The rules of management," he states, "must depend upon the pulse. I have seen no good results till the pulse fell in number; it matters not from what figure: fall it must before any change occurs. In Mr. G.'s case it fell from 109 to 70, in ninety minutes; in Mr. R.'s, from 80 to 65 in three hours and a half. I would strongly advise 60 as a standard from a high number; 40 or 50 from a lower figure—say from 80. Judging from the effects on the circulation, we cannot lose sight of the fact that the arrest of secretion depends on capillary congestion, which in turn might, by pressure, paralyze the nerves. The fact, however, remains that we compel the kidney to resume its functions by diminishing the force of the circulation, lessening the quantity of blood by allowing a much longer interval between each new arrival. Strange, too, it is that in four cases the attack commenced suddenly like a fit of stone, and, in reality, stone came away in each case."

We would urge upon our readers who may be disposed to try this remedy great caution in its use, for it is manifest, from one of Mr. B.'s own cases, that the fatal result was in a great degree due to the reckless use of the remedy.

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31. *Hot Bath in Erysipelas Ambulans of Young Infants.*—Prof. Abeling, of Stockholm, speaks in the highest terms of treating this form of infantile erysipelas by means of hot water. The infant is put into the bath at a temperature of 38° C. (100° F.), and hot water is gradually added until a temperature of from 40° to 42° C. (105° to 110° F.) is attained. After from ten to thirty minutes, according to the age and strength of the child and the influence produced, it is removed and wrapped in warm linen, which is covered over with a warm blanket. In this it is allowed to remain for two hours. Usually it at

once falls into a tranquil sleep; but when this is not the case a teaspoonful of cold water is repeatedly given. In bad cases the bath is given twice a day, but in ordinary cases only once, continuing it until improvement is effected.—*Med. Times and Gaz.*, Feb. 22, 1868, from *Journal für Kinderkrankheiten*, October.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

32. *Recovery after supposed Partial Dislocation of the Neck.*—Mr. J. B. MARTIN communicated to the Royal Med. and Chir. Society the following case:—

Emily M., aged 24, nurse, a stout, healthy country girl, of active habits and intelligence beyond the average of her class in life, returned home on the evening of Monday, July 29th, with the children under her charge, between eight and nine o'clock, and having placed the pony-chaise they had been using in the barn, was in act of closing the doors, when the left-hand door (an oak one, weighing 480 lbs.) fell, striking her on the side of the head, and carrying her with it to the ground. On assistance arriving, and the door being removed, she was totally unable to raise herself, being completely paralyzed, and suffering from difficulty of breathing. When raised from the ground, her head was bent forward, and slightly to the left side, and she had no power to raise it. She was placed in a chair, and, upon her fellow-servant endeavouring to raise her head, she felt and heard something go into its place with a snap; after which she so far recovered herself as to move with assistance, though with great difficulty, into the house, when she became faint, and vomited slightly, but was able after a short interval to retire up stairs. The faintness and nausea continued more or less during the night, with pain in the head and neck, and inability to move without assistance. The recumbent position was painful, and she was moved into an arm-chair, where the head was supported by pillows, affording great relief. She was seen for the first time about noon the following day. The countenance was pale, the expression somewhat stolid, and the features were swollen. The surface of the head and neck, especially on the right side beneath the angle of the jaw, was morbidly sensitive, and there was a dread of even a hair being pulled. She was perfectly conscious; there was no intolerance of light; the pupils were natural; the skin soft and cool; pulse 84, soft and regular; she had numbness of the right hand and arm, with partial inability to move them; slight ptosis of the right eyelid; and difficulty in opening the mouth, being only able to protrude the tip of the tongue; she could only swallow liquids. She was ordered to be kept perfectly quiet; the head and neck to be well supported; the hair to be removed, except just in front; to apply an evaporating lotion to the head, and fomentation to the neck by means of spongio-piline. In the evening she was rather more comfortable, free from constitutional disturbance, and had had a short nap. She retired to bed, but was obliged to resume the position in the chair. She continued gradually to improve from day to day; and on the 3d of August, five days after the accident, she was able to obtain rest in bed, when well supported by pillows. The position in the chair was still the most comfortable, and she was accustomed for some days after to rise at 4 A. M. to resume her place in it. Her improvement was progressive throughout, with the exception of a brief return of headache in consequence of excitement. On the 21st, three weeks after the accident, she was allowed to walk in the garden towards the cool of the day. The ptosis of the right eyelid had disappeared, and the countenance had resumed its natural expression. The power over the right arm, although still imperfect, was gradually improving; she carried her head in a stiff and formal manner, with a drooping forwards, until the beginning of October, when she recovered by slow degrees control over the motions of the head. The morbid sensibility of the surface of the head and neck, with pricking of the skin, and occasional pain

under the jaw, continued more or less for a fortnight, and there was likewise up to that period a sense of falling backwards, if unsupported, or any attempt made to raise the head. The treatment consisted in keeping the patient perfectly quiet, in the upright position, with the head well supported by pillows, low diet, an evaporating lotion to the head, and fomentation to the neck by means of the spongio-piline.—*British Med. Journ.*, Feb. 15, 1868.

33. *Fracture of the Clavicle—Difficulty of Diagnosis.*—M. Guerin exhibited to the Imperial Society of Surgery the clavicle of a man aged sixty, which had been fractured by the fall of a mass of earth. There had been no deformity, no ecchymosis, no mobility of the bone, but on causing the man to make certain movements of his arm, slight crepitation could be perceived. This man died of pneumonia, which afforded an opportunity to examine the clavicle. The periosteum and soft parts were intact; pressure on the upper surface of the clavicle showed no mobility; but pressure on the inferior face caused a projection of the fragments. This result could not be obtained in the living subject, as it would be impossible to place the hand under the clavicle.—*Gazette Hebdomadaire de Méd. et de Chirurg.*, Sept. 20, 1867.

34. *Fracture of the Jaw, through the Neck of the Right Condyle, from a Blow on the opposite side of the Face.*—Surgeon J. B. Cockburn, M. D., Royal Engineers, describes (*Army Medical Reports*, 1863) an example of this rare injury caused by a blow of the fist. The alveolar process was displaced to the left side, to the extent that the canine tooth of the right side corresponded with the central incisor of the right superior maxilla. This displacement was purely lateral. The lower jaw was in no way protruded or drawn backwards. A very moderate amount of pressure inwards, with the slightest inclination upwards, restored the parts to their normal position. The least attempt to open the mouth caused much pain at a point close to the tragus of the right ear. It was easy to guess the nature of the injury, and it required little manipulation to detect a simple fracture of the condyloid process of the right side, at a point very close to the insertion of the external pterygoid muscle. In fact, from the very partial disengagement of the two fragments, the fracture was diagnosed to have occurred at the very point of insertion of this muscle. A case of simple fracture of one condyloid process, from a *contre coup*, has never yet, as far as he was aware, been recorded; and in this instance, the symptom which Professor Hamilton, of New York, points out as an important diagnostic mark between a fracture of the condyloid process and a dislocation of one condyle, was not present—namely, the inclination, in case of fracture, of the chin to the side on which the solution of continuity has taken place. The fracture was put up with a splint of gutta-percha moulded to the lower jaw, the usual chin sling bandage, and with a piece of cork between the teeth; and the results have been in every way most satisfactory.—*Brit. Med. Journ.*, Dec. 28, 1867.

35. *Subperiosteal Resection of the Elbow.*—M. Ollier, who has attached his name to subperiosteal resections, has lately brought three cases before the Medical Society in which he resected all the processes of bone entering into the articulation of the elbow. By very careful management, and minute care, the periosteum and tendons inserted into it, were carefully preserved. The result in the three cases mentioned has been the complete regeneration of the joint, both as to form and movements. That such complete success may be attainable where excision of the articulation is necessitated by a recent injury, can be easily understood; but when the joint has been long the subject of caries, when the periosteum itself has been destroyed by chronic morbid processes, it is difficult to believe that much of that membrane can be made available for regeneration of bone. At all events, M. Ollier's cases will prompt every surgeon performing resection to preserve as much of periosteum and insertion of tendons as possible.

36. *On the Suture of Bones.*—Dr. Bérenger Féraud, in an interesting paper in numbers 39, 40, and 41 of the *Gazette Hebdomadaire* for 1867, gives a sum-

mary of sixty-six cases, some hitherto unpublished, but mostly collected from various sources, in which one or another form of suture has been employed in the various lesions of the bony system. Our readers will doubtless recall the very excellent results obtained in cases of ununited fracture by the use of sutures combined with the preservation of the periosteum, as detailed in Dr. Bigelow's pamphlet noticed in the number of this Journal for October, 1867 (p. 507).

M. Féraud's description of the method by which bone sutures may be best introduced is a very good one, and is illustrated with several wood-cuts.

All the different means of uniting bones by suture may be classed under two general heads, viz., the thread and the rivet. When a thread is to be employed it should be of metal and sufficiently malleable to be of easy introduction. No thread of organic material would furnish sufficient immobility to answer the purpose in view. When rivets are to be employed M. Féraud prefers them of ivory or of bone, believing that in some rare cases it is possible that they might be absorbed by the efforts of nature.

With regard to the cases to which bone sutures are applicable, M. Féraud very properly limits them to compound fractures and ununited fractures, in which less hazardous means have already failed. In the first class of cases (recent compound fractures) suture should only be used when coaptation of the fragments cannot be obtained by position alone. In ununited fractures, bone sutures may be considered an almost indispensable complement to the operation of resection.

M. Féraud also suggests the application of sutures after operations of resection for other causes than for pseudarthroses. If we are not mistaken the same suggestion (in the case of the knee-joint) has been recently made in Great Britain, if, indeed, the plan indicated has not been carried out in practice.—J. A. Jr.

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37. *Lithotomy by a Semilunar External Incision.*—Sir WM. FERGUSSON, in a very interesting lecture (*Lancet*, Jan. 4, 1868), discusses the several methods of performing this operation, and proposes a new one which, however, differs from the ordinary one, only in the external incision, and the manner of performing, which he describes as follows:—

"The staff being introduced, the patient is to be bound and held in the ordinary way. The usual lithotomy knife, like a scalpel in a strong handle, is to be held in the right hand with its cutting edge directly upwards; the point is then to be introduced into the skin on the right side of the perineum, midway between the anus and the tuberosity of the ischium and a little lower than the anus. It may be inserted a quarter or half an inch deep; and, by a pushing or gliding movement upwards, the right side or end of the semilunar incision is made, then the curve, and then the slope on the left is completed. During the movement the knife is gradually turned round with the hand, whose radial margin, from being first turned downwards, is ultimately upwards. A second similar sweep, with the extreme ends not so deep, should next be made, when the fore and middle fingers of the left hand should be pushed into the wound between the bulb and rectum, with the intention of separating those parts; it will then be found that the anus and rectum can be depressed with peculiar facility. Now, too, with possibly a touch or two in the middle part of the wound, it will be found that the finger readily slips into the space between the erector penis and compressor urethræ; and the staff may be felt through the tissues between them and the membranous portion of the urethra. By a dexterous push, the point of the knife may be introduced into the groove, or perhaps a little further cutting may be used to divide a portion of the lower margin of the triangular ligament and part of the levator ani, or these may be divided in withdrawing the knife. The point of the blade should be pushed along, say, one-half of the membranous portion of the urethra, into the prostatic portion, so as to notch or cut freely the left lobe of this organ, or the latter may be done in withdrawal. Should the gorget be preferred, it may be used after the opening has been made in the membranous portion. The subsequent steps are the same as in the ordinary lateral operation, excepting that the forceps may be held more to the right, and withdrawn through the middle of the perineum, instead of the

left side, as in the common way. Should the stone be large, the right side of the prostate can be more readily reached through this wound than through the lateral, and the good rule of pulling obliquely downwards in extracting can be more efficiently accomplished than through a wound in the side.

"The after-treatment is in all respects as in the usual operation, a tube being used or not, in accordance with fancy or fashion. The skin in front of the perineum immediately behind the scrotum being left entire, the wound is scarcely observable as the patient lies on his back. In one of my cases a surgeon of experience on looking at the perineum would scarcely believe that lithotomy had been performed until he made a closer examination.

"With the limited experience of only four cases, although three of them were adults, and comparatively unfavourable for operative interference, it would be wrong and beyond my wish to refer to this proceeding as specially superior to lateral lithotomy; yet I think it worth while to call the attention of my professional brethren to it from the conviction that it deserves trial, and with a hope that it may in some degree simplify, in regard to performance and danger, one of the most formidable and interesting operations in surgery."

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38. *Cure of Cleft Palate in Children by Operation, with a Description of an Instrument for Facilitating the Operation.*—Mr. T. Smith read (Jan. 14, 1868) before the Royal Med. and Chir. Soc., a paper on this subject. His object in presenting it was to communicate to the Society a plan of operating on clefts of the palate, applicable to all who suffer from the deformity, but especially to children, to those deficient in physical courage and in the power of enduring pain. No attempt is made to improve on the principles of staphyloraphy as laid down by Sir William Fergusson, though slight and inconsiderable modifications in that gentleman's practice are advocated, as more suited to the tender age of the patients for whom the plan in question is especially designed. The chief novelty in this proceeding is that chloroform can be employed. A painless and speedy operation can therefore be performed, and that with more precision and greater prospect of success than when the operator is dependent upon the self-control of the patient; while, from the painless nature of the operation, the cure of cleft palate can be effected in children, to whom formerly the benefits of staphyloraphy were virtually denied. The author discusses the probable advantages of the performance of the operation in early life, though he waits for a larger experience to fix the particular age at which it is best to attempt to cure the deformity. The plan of operating recommended depends chiefly for its success on the employment of a gag, whereby the tongue is depressed, the jaws can be opened and fixed, and the orifice of the mouth enlarged. This is adjusted when the patient is under chloroform. The modifications of the ordinary operation as suited to the insensibility of the patient are described. They consist chiefly in avoiding any considerable flow of blood until the very last step in the operation has been accomplished. The author recommends for children the employment of fine fishing gut and horsehair as the best materials for suture, and describes certain modifications in the ordinary shape of the needles employed and the manner of passing the sutures, which simplify and expedite the operation. The conclusions in the paper were supported by cases. In conclusion, the author stated that he trusted by the lapse of time and further experience to be able to determine the age at which an operation should be done, and the effect of an early operation on articulation and vocal resonance. Appended to the paper were the accounts of eleven cases where the operation for cleft palate had been performed in the manner recommended by the author—that is, with the aid of a gag, and under chloroform. In eight of the cases the operation was successful; three were failures. No operation had been attempted on the hard palate, though in nine of the cases the deformity involved the bony palate to a greater or less degree. The author expressed a belief that it would in many instances be unnecessary to perform any operation on the bony palate if the cure of the soft parts were effected in early life. In support of this belief he adduced three cases of operation where the soft palate only had been united, and where the hole remaining in the roof of the mouth had gradually contracted to very small dimensions.

Sufficient time had not elapsed since the operation in the author's cases to allow him to speak authoritatively on this subject. An easy method of fastening gut sutures without cutting the gut was described. Children were exhibited on whom the operation had been successfully performed, and one adult was also present, whose palate had been united by operation under chloroform. The author recommended the use of the gag and chloroform for adults as well as children in the performance of this operation. Though the effects of the operation in children on the powers of articulation had been at present highly satisfactory, the author abstained from making any definite statement on this subject, waiting rather for the lapse of time and additional experience to furnish fuller information.—*Med. Times and Gaz.*, Jan. 25, 1868.

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39. *Tracheotomy in Croup.*—A communication was read to the *Société des Hôpitaux* de Paris, by M. ISAMBERT on this interesting and important subject. The case was an infant of sixteen months, and the operation was successful. He reports the case on account of the extreme rarity of successful cases at that age, and states that he is not aware of more than four cases in which tracheotomy has been performed successfully under the age of two years.

Of the cases cited in the paper and in the discussion which ensued, no case was recorded under thirteen months; and it was stated that no case even below two years had ever recovered from the operation in the public hospitals. M. ARCHAMBAUD gave the results of his own practice. Sixty-five cases of tracheotomy, and of these twenty-two were successful. All agreed on the almost certain fatality of the operation in the comparatively rare cases of croup in adults. M. ROGER quoted statistics to prove that the most favourable age is between seven and ten years; for while twenty-two to twenty-five per cent. only recover, taking all ages together, it is found that between thirty-two and thirty-three per cent. recover of those operated on between the ages of seven and ten.

Another very interesting paper on the same subject was read by M. BOURDILLAT (M. Bergeron's house-surgeon) on the results of sixteen tracheotomies for croup performed by him at the Hôpital Sainte-Eugénie, of which ten were successful. He also gives the statistics of the cases operated on at that hospital during the last seven years and a half. They reach the astounding number of 813, with 208 recoveries. The percentage of recoveries has been gradually improving, having risen in 1865–6–7 to 31, 35, and 40 per cent. respectively.

M. BAIZEAU, chief surgeon to the Military Hospital of Algiers, devotes a short paper to the subject of tracheotomy in infants below the age of two years. He gives two cases from his own practice in which children of ten and fifteen months respectively recovered; and strongly recommends that, in suitable cases, the youth of the patient should not be allowed to contraindicate operation. The following list of the successful cases known to M. Baizeau may be quoted as including a case performed not many years ago in the Royal Infirmary of Edinburgh, and reported in the pages of this journal:—

"M. Isambert has lately reported a case of recovery in an infant of sixteen months. M. Archambault one of thirteen and one of eighteen. M. Roger has reported the case of a little patient of nineteen months, also saved by tracheotomy. M. Vigla has had a recovery in a little boy of seventeen months. MM. Potain and Moutard-Martin have each operated with success on infants of eighteen months. I recall also the cures obtained by MM. Trousseau and Barthez on infants of thirteen months, and by Bell, of Edinburgh, in one of seven months. M. Sedillot operated on his own little girl at six weeks, but in her case there was doubt as to the disease being really croup. If tracheotomy does not offer the same chances of success in infants below two years as in those above that age, it cannot be contested that it does sometimes succeed. Let us hope that soon the facts cited will be no longer exceptions."—*Ed. Med. Journ.*, Nov. 1867, from *Gazette des Hôpitaux*, 1867, Nos. 77, 83, 89, 100.

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40. *Ligature of the External Iliac Artery for Femoral Aneurism.*—This operation was performed by Mr. C. LEONARD, at the Bristol Royal Infirmary, February 5, 1867. The subject of the case was a tall, spare man, thirty years of age. The aneurism was caused by a severe strain, and first appeared about

a year previously. Compression was applied to the femoral artery, and continued at intervals for nearly three weeks, to promote collateral circulation.

Feb. 5. The patient being under the influence of chloroform, an incision four inches long was made in the right iliac region, commencing an inch and a half from the anterior superior spine of the ilium, and extending in a curved direction downwards and inwards, with the convexity downwards, to a little above the situation of the external abdominal ring; the tendon of the external oblique and the fibres of the internal oblique and transversalis muscles were divided on a director, the fascia transversalis opened, and the artery readily found, and tied about an inch and a half above its lower termination. The wound was closed with horsehair sutures, the limb wrapped in cotton wool, and hot water bottles were constantly applied to maintain the proper temperature.

He recovered slowly, but without any unfavourable symptoms, requiring opiates for the first few nights. He improved very rapidly in appearance and strength. The ligature came away on February 22, and the wound soon afterwards healed. One or two rather troublesome ulcers formed on the heel and ankle. The limb was bandaged from the foot upwards, making some pressure on the aneurism, which became flatter and softer and gradually smaller.

On the 10th of June the patient presented himself for inspection, looking stout and well, and was able to undergo regular labour. The abdominal parietes at the seat of operation were firm, and there was no tendency to protrusion.—*British Medical Journal*, Oct. 26, 1867.

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41. *Elephantiasis of the Lower Extremity cured by Ligature of External Iliac Artery.*—Dr. Geo. Buchanan relates (*Brit. Med. Journ.*, Nov. 23, 1867) the case of a woman, aged 17, admitted to the Glasgow Royal Infirmary with elephantiasis of left lower extremity. The limb "was a huge misshapen mass, the natural prominences being obscured by the overgrowth, and the depressions of the flexures converted into deep sulci. The skin had a hard brawny feeling, and was covered with rough scales, while over the dorsum of the foot and toes the whole surface was studded with conical papillæ of scarf-skin, fully an eighth of an inch high. This gave the limb a very peculiar appearance which is not easy to describe. The contour of the foot was entirely lost, there being a deep sulcus in front of the ankle, and a rounded protruding mass between that and the toes. In fact, the term elephant's leg defines the shape better than any written account could do. The measurement of the various parts of the limb were as follows: round the ankle, eighteen inches; calf, twenty-six inches; middle of thigh, twenty-three inches. Although the enlargement of the thigh was not so great as that of the leg, yet at the groin the skin and cellular tissue were so thick that the femoral artery could not be felt. The right leg was also in a state of incipient elephantiasis, presenting in a slight degree the characters described above. It measured round the ankle thirteen inches, calf sixteen inches and a half, thigh nineteen inches and a half. It should be mentioned that there was a general tendency to hypertrophy of the cellular tissue in every region, and over the abdomen the deposit was so copious that the iliac artery could with difficulty be detected. In all other respects the patient was in perfect health.

Dr. B. ordered patient to be kept in bed for two months with the limb elevated and bandaged; but at the end of this time there being no improvement, he ligated the external iliac artery December 21st, 1866. At the date of her dismissal the following were the measurements compared with those before the operation:—

	Round Ankle.	Calf.	Thigh.
Before operation	18	26	23
After, at dismissal	14½	17	20

But the diminution in size was not the only change produced by the operation. The hard, horny, scaly surface was changed into a soft elastic natural coloured substance, which had all the characters of healthy skin. The large horny looking projections of scarf-skin which covered the toes had fallen off, so that the dorsum of the foot and toes was quite smooth and soft. The patient could walk with comparative ease, and expressed herself as highly pleased with

the result. On comparing the two limbs, it was found that little difference existed between their size, except in the feet, the elephantine one still preserving its curious contour, though so much reduced in size.

42. *Extirpation of a Hypertrophied Spleen.*—The *Gazette Hebdomadaire de Médecine et de Chirurgie* for the 25th Oct. 1867, contains an account of a case of splenotomy performed by M. E. KŒBERLÉ Sept. 21, 1867. The subject was a female 42 years of age, of good constitution. The spleen was enormously hypertrophied and weighed when removed seventeen and a half pounds. There were strong adhesions between the upper portion of the organ and the diaphragm which had to be separated before the spleen could be removed; this was done with great care, nevertheless numerous small vessels were thereby ruptured, which gave issue to much blood; it was found impossible to control this hemorrhage, and the patient sank from its effects. The main vessels of the organ had been well secured by ligatures before its ablation, and they were found in place at the *autopsy*.

M. Kœberlé gives a *résumé* of the six operations of this kind previously performed: viz., by Fantoni, Zacarelli, Quittenbaum, Kuchler, Spencer Wells, and Péan, in three of which the patients survived the operation, and three died.

43. *Ovariotomy.*—Mr. THOMAS KEITH relates, in recent numbers of the *Ed. Medical Journal* (Nov. and Dec. 1867), fourteen cases of ovarian disease in which he performed ovariotomy; of these twelve patients recovered and two died.

44. *Fecal Fistula following Ovariotomy.*—Mr. T. SPENCER WELLS gives some particulars of a case of this (*Glasgow Medical Journal*, Feb. 1868). the only one, he states, out of two hundred and forty-seven complete ovariotomies in which fecal fistula followed the operation in his practice. A full report of the case is given in his first volume on Diseases of the Ovaries. This case, Mr. Wells thinks, "tells against the practice of tying the pedicle of an ovarian tumour, whether the ends of the ligature are left hanging out between the lips of the wound, or are cut off short and returned. The formation of a sort of canal or sinus by the adhesion together of folds of omentum or coils of intestine, in such a manner as to inclose the ligature and shut it off from the general peritoneal cavity, occurs, I believe, very generally when the ends of the ligature are not cut off. If the patient recover, one might expect more or less obstruction of intestine to follow such adhesions; although I am not aware of any case where such obstruction has been actually proved. When the ends of the ligature are cut off and the pedicle returned, we know from repeated *post-mortem* examinations that a similar adhesion of neighbouring intestine takes place around the end of the pedicle; and that, in some cases, pus has been circumscribed in this manner—until at length it has found an outlet, either through the abdominal wall, the vagina, or intestine. The occasional observation of cases of this kind (when at distant intervals I have been driven to adopt one or other of the *intra*-peritoneal methods of dealing with the pedicle) has led me more and more to the conviction that the clamp, or some other *extra*-peritoneal method, is not only more successful as regards the immediate result of the operation, but even more so if we look to the subsequent health of the patient.

"Patients who recover after the *extra*-peritoneal treatment of the pedicle, as a rule, soon regain and maintain perfect health. So do many of those who recover after the *intra*-peritoneal treatment. But some of them, sooner or later, suffer from chronic suppuration, hæmatocele, or fecal fistula; or, perhaps without any definite local ailment, are many months before they become strong and well."

45. *Colloid Cancer of Colon; Attempted Colotomy; Constipation for Eighty-eight Days.*—Mr. J. C. FORSTER communicated to the Royal Medical and Chirurgical Society (June 25, 1867) the following case of this:—

"A lady, aged 40, without children, was seized on September 3, 1866, with an attack of diarrhœa, which lasted ten days; her bowels became gradually confined

from this date, and pain occurred at intervals over the whole abdomen, more especially in the left iliac region. From October 10 to the day of her death the bowels were never relieved. There was tympanitis to a slight extent; she vomited occasionally; there was no great heat of skin; urine was rather scanty, but clear. Various remedies were tried; the long enema tube was passed about fourteen inches up the rectum, when it met with an obstruction, and the injection thrown in returned unchanged. The author saw her first on November 29, and found the abdomen by no means greatly distended; no hardness to be felt at any particular spot; occasional vomiting; an anxious countenance; a small thready pulse; a clean tongue; the extremities cold. No evacuation had taken place for fifty days, though she thought she passed a small quantity of flatus; nothing abnormal could be detected per rectum or vaginam. Colotomy was attempted; the colon was found flaccid and empty, lying deep in the wound. The incision was closed, and in four days the parts were perfectly healed. Opiates were again administered. The author saw this lady the second time on December 15, when she appeared much the same. A proposal was made to open the ascending colon, but it was not acceded to; and a suggestion was offered to explore the abdomen, to which the author would not consent, but tapped the distended intestines with a fine trocar and canula, with great temporary relief. No other remedies appeared available; she continued much the same, with slight sickness, and died exhausted on January 7, 1867, thirty-eight days after the attempted operation, and eighty-eight days from the date of the last evacuation. The post-mortem examination revealed colloid cancer of the descending and sigmoid flexure of the colon opposite the incision in the lumbar region; the rest of the large intestine was full of feces, as also a portion of the ilium; there were likewise traces of the disease in other parts of the abdomen. The author alluded to two interesting points in connection with the case, and offered some remarks upon them: 1. A possible source of difficulty in performing colotomy, which he believed with every care could not be foreseen; and 2. The extraordinary length of time during which constipation existed. Attention was also drawn to the method adopted to reach the colon—viz., by a longitudinal incision instead of a transverse. The variety of the cancer—viz., colloid—was alluded to, and also the mode of death."—*Med. Times and Gaz.*, Sept. 28, 1867.

46. *Case of Strangulated Hernia in which the Symptoms continued after the Reduction of the Tumour.*—Prof. Syme reports (*Ed. Med. Journ.*, January, 1868) an interesting case of this. The subject of it was a strong man, with his abdomen much distended, but nothing perceptibly wrong in the groins. "He had experienced no relief from the return of the bowel, but, on the contrary, during the four following days had continued to suffer from sickness, with frequent vomiting and obstinate constipation. Under these circumstances, we concluded that the sac had been reduced along with its contents, and that the bowel being still in a state of strangulation, there was no time for delay in resorting to efficient means of relief.

"I therefore made a free incision over the right spermatic cord, and cut through its coverings so as to expose the external ring, into which I introduced my finger and pushed it up, until the lower surface of a bag could be felt. This was brought into view by dividing the aponeurosis of the external oblique muscle to a sufficient extent, and cautiously opened, as it contained no fluid, and merely a portion of intestine. At the neck of the sac there was a very tight stricture, through which a probe-pointed bistoury having been guided by my finger, free admission was afforded to the protruded bowel. There was no bleeding, and a couple of sutures closed the edges of the wound, which was covered by a compress, properly secured.

"No sooner had the operation been performed than the patient declared that he felt relieved. In less than half an hour afterwards the bowels were freely evacuated; and everything went on well, without any occurrence worthy of notice."

Prof S. also reproduces a similar, or even more remarkable case, published by him in the same Journal for January, 1850, which he trusts will afford en-

courage ment to operate for the remedy of hernial tumours, reduced in a state of strangulation.

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47. *Hedrocele.*—Hedrocele, from ἕδρα, anus, and κήλη, a tumour, is the protrusion of a hernial sac, with a coil of intestine, from the anus. Dr. UHDE relates a case of this rare affection, and gives the following description of its chief symptoms. A hedrocele is a spheroidal or cylindrical tumour, which resembles, at first sight, a prolapsus ani; it is of a red colour, and marked on its surface by mucous follicles and enlarged veins. When the affection has lasted for some time, the veins become distended and the mucous membrane œdematous. Partial gangrene sometimes attacks the swelling, and an orifice is occasionally formed at its anterior part, which opens into the recto-vesical or recto-uterine pouch. The tumour is very tense and resistant to the touch, particularly in front. This rectal hernia is sometimes strangulated; and very serious symptoms are presented similar to those of strangulation of an ordinary hernia. If the obstruction be not relieved, it may produce perforation, gangrene, fecal abscess, artificial anus, and, in some cases, even death. Strangulation of an hedrocele is distinguished from a similar condition of rectocele by being limited to a part of the tumour and not involving the whole of the prolapsed portion. The prognosis of this affection is unfavourable, from the irreducibility of the tumour and its liability to become strangulated. When reducible, an hedrocele may be relieved by rest, cold baths, and the introduction of a pessary by the anus. Dr. Uhde proposes to relieve strangulation by making two incisions through the skin and prolapsed rectum on each side of the hernia, and by incising, after the sac is exposed, the muscular ring which compresses the neck of the tumour.—*Brit. Med. Journ.*, Nov. 16, 1867, from *Langenback's Archiv*, 1867.

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48. *Treatment of Gunshot Wounds of the Lungs.*—In the treatment of gunshot wounds of the lung, says Inspector-General MOUAT (*Surgical History of the New Zealand Campaign*), bleeding has been very generally, if not altogether discarded. The inevitable result of a wound of the lung is pleurisy, and the effusion into the thoracic cavity is often so great as to destroy life by suffocation at an early period. In one of the cases, the effusion found its way through the opening of exit made by the bullet. This did not save the patient, but it gave him very great relief, and enabled him to prolong the struggle till the eighty-seventh day. It would seem to be a judicious proceeding to open the pleural cavity in order to afford exit to effused fluid as early as this can be detected. With this assistance, a very vigorous constitution may battle through the illness, which to a weaker man is almost certainly fatal. It is a matter of the first importance to fix the injured side of the chest. This is best and most easily effected by inclosing that side of the chest with broad strips of adhesive plaster, so as to prevent all motion of the ribs, leaving an opening opposite the wound or wounds. The beneficial results of this practice were shown in two very serious cases of this nature, in the campaign of 1860-61.—*Brit. Med. Journ.*, Nov. 16, 1867.

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49. *Insect Stings Treated by Collodion.*—M. LATOUR insists greatly upon the value of impermeable coating of the skin as a means of combating inflammation. He insists upon this principle: that inflammation consists in the local exaggeration of organic heat; and that the action of the air on the skin is an element in that heat. Shave a rabbit, and cover it with collodion: it soon dies of cold. If one limb be coated, that limb only becomes cold. Even in the case of inflammations resulting from a morbid poison, smallpox pustules, furuncle, bites of insects, M. Latour (*Journal Pratique de Méd.*, Sept. 1867) is equally of opinion that it is necessary to arrest the exaggerated production of animal heat. M. Marchal (de Calvi), in his book on diabetes, describes fifteen cases of uric anthrax successfully treated by coating them with collodion. For insect bites, M. Latour considers and finds experimentally that the collodion coating is essentially serviceable.—*Brit. Med. Journ.*, Nov. 16, 1867.

50. *Spontaneous Fracture of Urinary Calculi in the Bladder.*—Mr. George Southam records (*Brit. Med. Journ.*, Jan. 4th, 1868), three cases of this rare occurrence, two of which came under his own notice, and the third under that of Mr. Luke.

OPHTHALMOLOGY.

51. *Exophthalmic Goitre.*—Dr. Morell Mackenzie communicated to the Clinical Society (Jan. 10, 1868) three cases of this disease in all of which the characteristic symptoms of the disease, palpitation of the heart and throbbing of the carotid arteries, were present. In one of them the signs of mitral regurgitation were present. One fatal case was complicated with epileptiform convulsions and maniacal paroxysms, which continued until death. A fourth case was referred to in which the cardiac and arterial symptoms were absent. One of the patients was exhibited. Dr. Mackenzie observed that in all the cases goitre preceded the other symptoms of the disease. He regarded it as most probable that the disease is dependent on lesions of the medulla oblongata, which, however, may exercise their influence through the vasomotor nervous system, and drew attention to the negative results of ophthalmoscopic examinations in his cases as compared with those obtained by Geigel.

Dr. Greenhow differed from Dr. Mackenzie as regards the dependence of the exophthalmos on the bronchocele. In a female patient, aged thirty-five, in whom the disease was evidently induced by an emotional shock, and lasted for eight years, there was at first no goitre, although all the other symptoms were well-marked. This patient was successfully treated by chalybeates, completely recovering after being three or four years under observation. In this case, as in others, the weakness of the radial pulse contrasted with the violence of that of the carotid. There were frequent alternations of improvement and exacerbation, which had an evident relation to catamenial disorder.

Dr. C. J. B. Williams objected to the term exophthalmic goitre, as there is often no enlargement of the thyroid. He regarded the swelling of the thyroid and the projection of the eyeballs as a mere result of the enlargement of the arteries. In most instances iron, and especially the astringent preparations in large doses, appeared to be curative. These remedies should be combined with nutritious regimen and quiet.

52. *Normal Lens Extraction.*—Dr. Adolph Weber regards the method of linear extraction of cataract as a great step in advance, as far as principle is concerned, on the method by flap extraction, he is yet of opinion that the sound principle is not at present thoroughly carried out. He wishes to combine an incision that shall not exceed a fourth of the circumference of the cornea, with a freedom of exit for the lens that shall render the use of traction instruments exceptional—as exceptional, to use his own phrase, as the use of forceps in labour. He aims also at a plan of section that shall reduce to a minimum the number of cases in which loss of vitreous occurs; and he seeks to leave the ciliary border of the iris intact. He thinks Von Graefe's section objectionable on account of its steepness, of the direction given to it by turning the edge of the knife forwards; and he sees in the complete iridectomy a frequent cause of complications that arise from tags of iris becoming entangled in and adherent to the angles of the wound.

As the result of various experiments, Dr. Weber arrives at the conclusion that the best section for a full-sized lens is one exactly in the margin of the cornea, and in the plane of the margin, of such dimensions that its angles shall be nine millimetres apart when its centre gaps to the extent of four millimetres. All operators know that the ordinary flat lance-knife cannot be kept in the corneal margin; and Dr. Weber has designed a modification of it by which this difficulty is overcome. His knife bears a general resemblance to the bent lance-knives commonly used for scoop extractions, but differs from them in several

points of detail. The triangular blade is bent at an angle of 120° to the shaft, and is 10.25 millimetres in length, so as to admit of being thrust home in an eye of which the cornea is twelve millimetres in diameter. The blade is ten millimetres broad at a distance of 6.5 millimetres from its point; retains the same breadth for two millimetres further back, so as to render the external and internal corneal wounds equal in length; and then diminishes to the shaft, so as to facilitate withdrawal. The blade thus bears some resemblance in shape to the heart on playing-cards. It is also concave from side to side, the concavity looking backwards, and the curve having a radius of 10.719 millimetres. With such a knife Dr. Weber states that it is possible to make an incision that shall be in the same plane as, and wholly coincident with, the margin of the cornea. He chooses the lower, or lower and internal part of the circumference, draws out the iris with a hook and cuts off a little of the pupillary margin only, lacerates the capsule with great care and nicety, and then, by pressing back the posterior lip of the wound with the flat of a scoop, and by making a little counter-pressure, at a point opposite the centre of the incision, with the forceps by which the globe is held, he finds that the lens usually glides out with great facility.—*Lancet*, Jan. 11, 1868, from *Archiv für Ophthalmologie*.

53. *Epidemic Ophthalmic Disease.*—Sir W. R. WILDE describes (*Medical Times and Gaz.*, Feb. 1, 1868), a hitherto undescribed epidemic which has recently prevailed in Ireland.

"The subjects were generally girls, and from one month to five or six years of age. The disease in most instances commenced with fever of considerable violence, frequently accompanied by a measly eruption of about two days' duration. In some instances there was also a special redness and swelling of the joints, particularly the elbows, knees, and ankles, like what is seen in diffuse inflammation, or what gives a suspicion of blood poisoning, or in rapid cases of malignant scarlatina.

"After a day or two one eye became affected, and then the general symptoms usually mitigated. The ocular symptoms were: General but slight vascularity of the conjunctiva, but no chemosis or purulent discharge beyond what occurs in catarrhal ophthalmia; zonular redness of the sclerotic vessels round the cornea, and some slight pain and intolerance of light. I have, however, seen cases in which there was scarcely any redness of the tunica albuginea. The eyelids were but very slightly affected; globe very tense, and apparenly enlarged.

"The cornea first showed symptoms. In some cases it commenced with superficial ulceration, but in most of the instances that came under my observation in the early stage, it suddenly became gray, as in subacute corneitis in weakly subjects. At the same time the iris advanced towards the cornea, when it was found to have rapidly changed its colour to a greenish brown, showing intense internal inflammatory action, probably extending in the choroid likewise, and in all probability commencing in the interior of the eye.

"In nearly every case the anterior chamber became full of lymph in a few hours, and lymph was also effused on the external surface of the cornea, as in cases of diphtheria; and, as in all such cases occurring on the surface of the eye, presented a raised line where the eyelids met below the central axis of the globe. The symptoms subsided slowly; the cornea did not slough or burst except in one case that came under my notice, but I have not seen as yet a single recovery.

"In only one case have I seen the second eye affected, and that was in a twin child of three months old. In those cases that I have had an opportunity of examining subsequent to the inflammatory attack, the majority presented a softened and partially collapsed globe, discoloured iris, partial or complete adhesion of pupil to lens, which was a dirty yellow colour. I have been well acquainted for many years with the local disease described above, both as occurring in infants in the form that I have mentioned, and in children from five to twelve years of age, as in diphtheritic affection of the eye, in which I have sometimes been able to draw off with a forceps from the anterior surface of the cornea a layer of lymph, but I have never known it to assume an epidemic form until the present."

54. *Rarity of Severe Cases of Granular Lids in English Practice.*—The following statement will excite surprise in this country, where severe cases of granular lids are of such frequent occurrence.

"It is a matter of frequent remark from foreign visitors to Moorfields that cases of trachoma are very much less frequent than at other ophthalmic institutions. Amongst Mr. Hutchinson's patients during the last six months there have not been more than half a dozen such cases of any great severity. On December 12 the cases were counted; and, out of fifty patients, only two were attending for granular lids. Of these, one was an Australian case, originally severe, but now nearly well, and the other a mild case in a young child.

"Most of the more severe cases are either in Irish persons or in those who have lived abroad—Egypt, Australia, etc.

"The practice at present pursued at this hospital of applying rather strong solutions of nitrate of silver (twenty grains to the ounce) appears to be very successful. Mr. Hutchinson frequently uses in addition drops of chloride of zinc (two grains to the ounce)."—*Med. Times and Gaz.*, Dec. 21, 1867.

55. *Treatment of Opacities of the Cornea.*—The following are the conclusions of a memoir presented to the Academy of Sciences, Sept. 23, 1867. By Dr. Raphael Castorani:—

1. The cornea reproduces itself.
2. Wounds and ulcers of the cornea are cured without opacity by the action of stimulants, which while they promote the reproduction of the cornea, also modify the secretion of the conjunctiva.
3. To cure opacities of the cornea, they must be transformed into wounds or ulcers, and then treated like the latter.
4. Opacities may be transformed into wounds or ulcers by means of an operation, or by a collyrium of iodide of potassium.
5. The action of the saturated solution of iodide of potassium appears to be caustic, dissolvent, and astringent.—*Gaz. Méd. de Paris*, Oct. 26, 1867.

MIDWIFERY.

56. *Labour in Shoulder-Presentation.*—In an admirable memoir on shoulder-presentation Lazzati illustrates the following propositions: That, wheresoever possible, attempt should be made to correct this presentation, *i.e.*, to restore the head, as rendering spontaneous delivery possible. That corrections may be attempted with prospect of success, either during the end of gestation or at the beginning of labour, by external compression or manipulations when the head of the fœtus is to be brought over the inferior segment of the uterus. That in labour somewhat advanced, or when attempt at correction fails, it is better to bring down the nates practising turning by the feet. That nature sometimes completes labour by the shoulder by herself, the modes being, (*a*) spontaneous cephalic and podalic *version*; (*b*) spontaneous cephalic and podalic *evolution*. That spontaneous version by the feet is a true natural substitution of the pelvic region for that of the shoulder, brought about whilst the fœtus is still entirely in the uterine cavity, and above the brim of the pelvis. That spontaneous evolution is the true natural labour by the shoulder, which is accomplished, things being favourable, under the laws and mechanism governing the passage of all other parts through the pelvic canal. That as to spontaneous version we may substitute artificial version by the feet whilst the fœtus is free, so when the shoulder has descended deeply into the cavity, if spontaneous evolution cannot be effected, labour may be completed by artificial evolution. That artificial evolution is always fatal to the child, and somewhat dangerous to the mother. —*Brit. and For. Med.-Chir. Rev.*, Jan. 1868, from *Annali Universali di Med.*, Milan, Oct. 1867.

57. *Case of Triplets, two blighted at different periods, the third fully developed.*—Dr. INGLIS showed to the Edinburgh Obstetrical Society, 11th Dec., 1867, a large piece of membrane containing two placentæ—one apparently a six-month one, and the other a four-month one—which had been expelled after the birth of an ordinary full-sized child and placenta. A six-month fœtus, very much decomposed, was attached by a cord to the larger placenta, but no trace of any fœtus could be discovered in connection with the smaller one. Dr. Inglis considered that the patient had become pregnant of triplets; that one had become blighted in the early months, and no trace of it remained save the placenta, which had increased in size to a certain extent; the second fœtus had died about the sixth month, but was not expelled; while the third had gone on to the full time, and was born alive and healthy.—*Edinburgh Med. Journ.*, Feb. 1868.

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58. *Conception with Dropsical Amnion; Difficulty in Diagnosis.*—Dr. GREENHALGH narrated to the Medical Society of London (Nov. 4, 1867) the case of a patient who had been married eleven years, and she was then five and a half months advanced in her eighth pregnancy. She stated that after her last confinement, in January last, her abdomen did not decrease in size, as in previous labours, and that at the fourth month of her pregnancy she could scarcely move about, and could not lie down. On examination on October 23, the abdomen was found very prominent, and numerous veins were noticed beneath the integument. Fluctuation was well marked in every direction, but at the right iliac fossa there was a doughy, non-fluctuating swelling. The vagina was short and lax, and the os uteri fairly dilated. No ballottement could be detected. Was the case one of ovarian dropsy complicating utero-gestation, or was it conception with dropsy of the amnion? Should she be tapped, or should labour, which was somewhat advanced, be expedited? The latter course was agreed upon. After the administration of ergot, pains came on, which were followed by rupture of a dropsical amnion. Dr. Greenhalgh pointed out the extreme difficulty—nay, the impossibility—of arriving at a certain diagnosis in such cases, and the hazards incurred by those practitioners who recommend tapping a fluctuating abdomen during pregnancy.—*Med. Times and Gaz.*, Nov. 9, 1867.

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59. *Treatment of Prolapsed Funis.*—Dr. K. F. I. BIRNBAUM gives an historical *résumé* of the plan of replacing the cord by putting the woman in the knee-elbow position. He quotes Deventer, 1701; John Mowbray, 1724; Henry Bracken, 1737, and others, as having recommended this practice; and more lately V. Ritgen (1848). As a pupil of Ritgen's, B. says he has often practised this method. He says—When a loop of funis is still high in the cervical canal, and the cervix scarcely admits the examining finger, it may be that the knee and elbow position is useful; but when the loop has once passed through the os uteri, whether head, trunk, or foot present, it will be vain to expect any good from this position. He remembers no case where manual aid was not also necessary, in addition to the knee-elbow or side position to replace the cord, or to extract the child.—*Brit. and For. Med.-Chir. Rev.*, Jan. 1868, from *Mon. f. Geburtsk.*, Oct. 1867.

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60. *Traumatic Aneurism of the Uterine Artery.*—Dr. GRAILY HEWITT exhibited to the Obstetrical Society of London (Dec. 4, 1867) a specimen of this very unusual lesion. The subject of it was aged thirty-seven, and the mother of several children. She was delivered by means of the forceps, and for the first few days appeared perfectly well. On or about the fourth day after labour, her husband came home drunk, and it is stated that he knelt upon her as she lay in bed. No immediately bad effects followed, but, thirteen days after labour, a slight flooding occurred. Inflammatory action on the right side of the abdomen became evident. Twenty days after labour, a second violent flooding took place, from which she nearly died. Thirty-one days after labour large quantities of yellowish matter escaped per vaginam. On the thirty-fourth day a third violent flooding came on; and on the thirty-seventh day there occurred again a

fourth and final violent hemorrhage, from the effects of which she could not be rallied. The parts exhibited consist of the uterus and neighbouring structures. The uterus is large, os patent, a small clot within it. At the junction of the cervix and body are two depressions, one on each side; on the left side there projected into the uterus from the pouch in question a rounded mass half an inch in diameter. By the side of this projecting mass a probe freely passed through the pouch into the interior of a large abscess, which reached from the broad ligament to the kidney. The little mass was hollow, contained a small clot of blood, and was perforated at one part of its surface. It was found, on further dissection, to be an aneurismal dilatation connected directly with the uterine artery, which opened freely into it. The sac itself was composed of layers of fibrin. It is evident that the uterus had been bruised, and probably actually lacerated, by the pressure employed against the projecting pelvic brim behind, the organ being at the time of the injury still of considerable size. The perforation of the uterine wall, and the abscess, were secondary effects; the aneurismal enlargement showed that the uterine artery had been injured, and the source of the repeated hemorrhages from the uterus was the enlargement in question. The case appears to be unique.—*Med. Times and Gaz.*, Jan. 18, 1868.

61. *Puerperal Fever, or Puerperal Pyæmia, after an Abortion.*—Dr. Snow Beck read before the Obstetrical Society of London (Dec. 4th, 1867), a case in which abortion was induced at the end of the fourth month, in a healthy young lady, aged twenty-six. After a short time the symptoms observed were dirty and muddy complexion, great weakness, intense thirst, constant retching, cold perspirations, extremely rapid pulse, mind clear, though wandering sometimes, and much irritability. She died on the sixth day after the abortion. The post-mortem examination showed the uterus large and flabby, a portion of placenta imbued with purulent fluid, adherent to the uterus, and attached to it a considerable amount of coagulated blood; purulent fluid in the uterine sinuses, which were otherwise healthy, but so patent as to admit of fluid being injected through them; peritoneum not injected, though the pelvic portion was covered by a thin layer of soft lymph, and there was effusion of brownish serosity into the cavity; lobular congestion of the lungs; effusion of serum into the pleuræ, with soft lymph on the surface; small collections of similar exudation beneath the pleura. The minute structure of the internal surface of the uterus was fully detailed, and the relations of the placenta found to accord with the descriptions of the Hunters and others. The case appeared clearly to show the purulent infection of the general system through the pervious state of the uterine sinuses; also, that one of the most fatal forms of puerperal fever arose from this cause; the sinuses being pervious in consequence of a want of permanent contraction of the uterus. The statement of Dr. Barnes that he had repeatedly seen puerperal fever after perfect contraction of the uterus was examined, and the cases related by him were considered by the author to be diseases very different from puerperal fever—viz., Bright's disease, obstruction of the gall-duct, acute atrophy of the liver, scarlatina, and phlegmasia dolens. Lying-in women, when exposed to the infection of zymotic diseases, frequently took those diseases, but their essential characters remained unchanged. They often existed epidemically, and were infectious, and hence arose the assumed epidemic character and infectious nature of puerperal fever. In the treatment it was considered of much importance to prevent the purulent infection by effecting a firm and permanent contraction of the uterus; when it had occurred, to cleanse out the uterine cavity, and give the sulphites. The large administration of brandy and the application of a tight bandage were prejudicial, and the latter impossible, from the tenderness of the abdomen and uterus.

After some remarks from Dr. Tyler Smith, the following letter from Dr. Barnes, who was unavoidably absent, was read: "I am confident that contraction of the uterus, although a very desirable object to attain, is not a security against puerperal fever. I wish also to observe that Dr. Beck bases his criticisms upon five cases referred to in my lectures, as if these cases embodied my complete views upon puerperal fever. The lectures were broken off for want of time. I had of

course a great deal to say about septicæmic or pyæmic puerperal fever arising in the patient's own system. I maintain that the division I propose in those lectures on puerperal fever into excretory, uræmic, cholæmic, scarlatinal, septicæmic, etc., is of great clinical value. For example, a lying-in woman is taken with fever. It is very difficult, sometimes impossible, at first, to tell whether that fever is really of epidemic origin, as scarlatinal, or whether it be strictly of puerperal origin. The puerperal state will impress its stamp upon any kind of fever, no matter whence obtained. Therefore it is a sound clinical proceeding to regard every fever in a lying-in woman as puerperal fever first; then to endeavour to analyze the symptoms with a view to discover the peculiar or special nature of that fever. To say that true puerperal fever is not contagious is to refuse to believe in one of the best-attested facts in medicine."

Dr. Playfair said that he was in the position to relate a fact connected with puerperal fever which seemed to him to be of itself sufficient to negative Dr. Beck's theory that zymotic diseases were not modified by the puerperal state. Some years ago a lying-in ward had been established at King's College Hospital. The utmost care had been taken in the construction and management of the ward, but in spite of every precaution the mortality had been for the last year or two excessively high. About a month ago numerous cases of erysipelas appeared in the surgical wards, and immediately afterwards the two most recently confined women were attacked with a very adynamic form of puerperal fever, which proved fatal in both instances. There could be no doubt that the cause of the disease was the same as that which was producing erysipelas in the surgical wards. There was, however, no trace of erysipelas as such in the puerperal cases, and the natural inference was that the action of the poison was modified by the state of the patients. He was happy to state that the authorities of the hospital had now determined to close the ward altogether. Doubtless a relaxed condition of the uterus was, as Dr. Beck maintained, a strong predisposing cause of puerperal fever; but he believed it would be a most false and dangerous conclusion if we were to generalize from this fact, and overlook the other and well-established modes by which puerperal fever was produced.

The President, Dr. HALL DAVIS, agreed with the author in his view of the pathology of the case which he had brought before the Society. It was one of puerperal septicæmia due to the absorption into the blood of putrid matter from the uterus. But while admitting that perfect contraction of the uterus was most important, he could not consider the want of it as more than an occasional element in producing puerperal fever, which had many other sources. He was of opinion that cases of sporadic peritonitis should not be tabulated with cases of puerperal fever, as the former arose from ordinary causes of inflammation, while puerperal fever, whether accompanied or not by peritonitis, arose from the introduction of poison into the blood, either by the veins or the uterus, or by the lung in inspiration. Contrary to the author, he was a strict believer in the contagion of puerperal fever immediately from patient to patient, and mediately through a third person. He was also convinced that other fevers, as typhus, scarlet fever, measles, and the emanations from hospital gangrene, had been prolific causes of puerperal fever. The taint conveyed from post-mortem examinations was another source of puerperal fever. This was well-illustrated by the statistics of the Vienna Lying-in Hospital, where at one time, when the students passed directly from their dissections to the lying-in women, the mortality, was 1 in every 10 deliveries. When this arrangement was changed, the percentage of deaths fell to 1 in 74. Lying-in hospitals are no doubt a boon to poor women without homes, but one greatly mitigated by the fact that the mortality in them from all causes is rarely less than 1 in 90 or 100, and generally greater. The institution of cottage hospitals would no doubt greatly lessen that mortality, and he hoped some day to see them established. Out-door institutions giving home attendance, such as the Royal Maternity Charity, presented a much smaller mortality. In that Charity only 1 death in 350 deliveries occurred. In conclusion, he could add, from long experience, his testimony to the great value of disinfecting injections of a proper temperature, timely resorted to, in preventing and arresting at its outset septicæmia of uterine origin in cases of putrescent lochia. But they came too late when delirium and other formidable symptoms had supervened.—*Med. Times and Gaz.*, Feb. 22, 1868.

62. *Puerperal Temperature.*—Mr. Squire, in a paper read before the Obstetrical Society of London (July 3d, 1867), remarked that it was to the careful study of the natural history of disease, that medical science owed much of its recent progress, and that some of its surest advances had been guided by the systematic use of the thermometer in marking the variations of bodily temperature. The study of such variations, as illustrative of the changes that take place in pregnancy, in parturition, and in the puerperal state, was the subject of the present paper. In the latter months of pregnancy the temperature of the body is somewhat increased, and, after the sixth month, it will generally be found to be somewhat over 99°, subject to a slight variation in different persons, and in the same person under different conditions. In the unimpregnated condition much greater oscillations of temperature occur in connection with the catamenial period than at any time during pregnancy. Thus on the occurrence of the catamenia there is a considerable fall in temperature, and a variable rise shortly before, the temperature having been raised as much as one degree and one degree and a half in some cases just before the period; and in one case a fall of two degrees and a half took place within the first two days after its appearance. The difference between the vaginal and axillary temperatures will seldom be more than one-third of a degree, and frequently only one-fifth or one-tenth; if in the latter situation, all the requisite precautions to secure accuracy are observed. In this way 98.45° was obtained as the normal temperature in the axilla, and 98.75° in the vagina, when there were no disturbing circumstances. In three of the twelve cases taken for analysis in the present paper, where the comparison was made with the view of obviating some of the sources of error that might arise in investigations of this kind, the following results were obtained: In one case where, on the second day from delivery, the axillary temperature was 98.3°, some pain being complained of from slight perineal fissure, the local temperature was found to be only 98.5°. The next day there was a sudden rise in the axillary temperature to 103.3°, with much fulness and heat of the breasts; and although the perineal tenderness had disappeared, the temperature there was 103.7°. In the second case of perineal fissure, the cicatrization of which was complete on the ninth day, the temperatures were 98.2° and 98.3° respectively. In a third case, in which this comparison was made five hours after delivery, the temperatures were 99.2° and 99.4° respectively. The observations of puerperal temperature, except in these special instances, are all taken as in ordinary illness, by placing the bulb of the thermometer in the axilla, care being taken to secure its contact with both surfaces of the skin, to maintain this contact perfectly for a sufficient time (which should not be less than three minutes), and to guard against loss of heat by evaporation from the surface or through insufficient covering. There is not only no difficulty, but considerable convenience, in carrying out this method of noting progress during the lying-in state; the time occupied in other necessary inquiries suffices for obtaining these indications, which, when satisfactory, save further trouble and anxiety, or, on the other hand, give timely warning that precautions are needed. The commotion and efforts of parturition itself, while confined within the limits of natural labour, cause but a slight elevation of temperature, however great the sensation of heat may be either to the patient or the observer; indeed, in the axilla the thermometer will seldom reach its usual height. In the cases examined, the highest reading of a thermometer used in the ordinary digital examination was 99.9°; the lowest series in any case had only a range from 98.9° to 99.1°. In four cases the temperature was above 99° five or six hours after delivery, and in one case it was 99.5° twelve hours after delivery. The elevation of temperature thus occasioned immediately after delivery has invariably experienced a continuous decline; and in most cases, if not in all, the temperature has not only descended to the normal line, but in some cases has gone considerably below it. This subsidence always takes place in the first twenty-four hours; it may be complete in twelve hours, or it may be prolonged into the second day. The lowest point reached in any case was 98.6°. The most constant and obvious disturbance of temperature in all the cases investigated is the rise which ushers in and accompanies the formation of milk. The commencement of this reaction is most regular, and it attains a certain prominence

forty-eight hours after the birth of the child. When the secretion of milk is readily established, the temperature again undergoes a fall as sudden as the rise, which seems necessary to its formation. The period of this subsidence is most variable, and the aberrations which the line of temperature presents before it finally falls into the normal line fully warrant the care and attention at this time traditionally conceded. Of the twelve cases tabulated, three were primiparæ; in three chloroform was given; three were in every respect normal; and three were complicated: the complications being, in one case, convulsions before delivery; in another, breech presentation; and in the third, a cross presentation necessitating version, and this case was also one of twins. In one case lactation was avoided; all the others suckled their children during the whole time they were under observation. The highest temperature reached was 104.3° on the tenth day; on the thirteenth day it fell three degrees, and soon became normal. In this case there was healthy action of kidneys, skin, and bowels, and the secretion of milk was abundant. In two other cases, until the fifteenth day the temperature continued somewhat above the normal line; in all the other cases it had become steady at this line before the ninth day, and in some in which this line had been reached on the third or fourth day there was a tendency to undue depression. In the patient who did not suckle, the first rise in temperature was less sudden and the subsidence more gradual, and it was not at any time so high as in the other cases. To obviate sources of error due to diurnal variations of temperature, observations were taken in the majority of cases between nine and ten o'clock, both morning and evening, until the fifth day; at noon on many of these days, and in the afternoon on subsequent days. These all show a steady progression in the direction indicated; and although an oscillation is shown daily, or on alternate days in some of the higher temperatures, it is not until the puerperal state is nearly over, and convalescence well advanced, that the ordinary diurnal variations again become evident. In reviewing the influence of sleep, food, stimulants, and medicine, on the thermometric phenomena presented by the cases examined, it would seem that the first subsidence of temperature is chiefly favoured by sleep; that in this way the time of delivery, if happening in the later hours of the day, had an influence; that it followed sooner upon a labour of some duration than upon the more rapid, and also where there had been a slight hemorrhage and no coagula remained. That during the period of low temperature, aid is best afforded by sleep, solid food, and warm diluents, and not by alcoholic stimulants. That aperients are not advisable in the first forty-eight hours of the delivery, as, during that period, they tend to check the formation of milk, and consequently delay the lowering of temperature; their action is more serviceable in the complications than in the ordinary requirements of the puerperal state. The disturbance of the pelvic viscera during parturition interferes with the natural action of the bowels, so that enemata are required, especially in those cases where solid food was freely taken from the first. That the judicious use of alcoholic stimulants has a most marked influence during the puerperal state. In the relations of this to the indications of the thermometer, three rules are provisionally offered. 1. That while the temperature continues high, and the secretion of milk is not fully established, stimulants may be useful and even necessary. 2. That when the secretion of milk is free, and the temperature still high, stimulants are unnecessary and may be injurious. 3. That when the temperature has fallen, and the secretion of milk is free, stimulants are safe and necessary adjuncts to food. Practically this last conclusion alone is of considerable convenience, and, when these conditions occur, the patient can generally be left with safety. In none of the cases were alcoholic stimulants given during the first three days, and in the case where suckling was not attempted, they were abstained from altogether. The conclusions which may fairly be deduced from the facts here given are—1st. That natural labour is not attended by any great exaltation of the temperature of the body. 2d. That after labour there is always a fall in temperature. 3d. That there is a subsequent rise in temperature, which has for its natural termination the secretion of milk. 4th. That observations of this kind are desirable as illustrative of the principles that should guide us in the management of the puerperal state.—*Med. Times and Gaz.*, Sept. 28, 1867.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Supplement to the Paper on Amputation at the Knee-Joint and at the Knee. By JOHN H. BRINTON, M. D.

Since my article in this number was printed off, an elaborate essay on the same subject, from the pen of Dr. Markoe, of New York, has appeared in the *New York Medical Journal* for March, 1868. In this paper Dr. Markoe reports fifty-one amputations at the knee-joint, thirty-one of which were performed at the New York Hospital, and the remainder in other hospitals and in private practice. Of the fifty-one cases, twenty-two died, a mortality of a little over forty-three per cent. Thirty-eight amputations were performed for injury; of these twenty-seven were apparently primary in their character, with fourteen deaths; and eleven were secondary, with six deaths. Dr. Markoe also refers to four successful amputations performed by Dr. Tewksbury, of Portland, Maine, which had been reported to him verbally.

If the results of these cases collected by Dr. Markoe be appended to the writer's synopsis of American cases, exhibited at page 332 of the present number of this Journal, the general mortality rate therein stated will be somewhat modified, as will be apparent from the following tables. Cases 1 and 46 of Dr. Markoe's report having been included in our previous tabulations are omitted in this reference.

Table showing the Results of American Amputations at the Knee-Joint.

	Cases.	Recoveries.	Deaths.	Per cent. of mortality.
Primary amputations after accident . .	50	28	22	44.
Secondary amputations after accident . .	31	18	13	42.
Secondary amputations for disease . . .	30	25	5	16.66
Cause and period of amputation undetermined	6	6		
Total	117	77	40	34.19

Table showing the Results in the aggregate of American and Foreign Amputations at the Knee-Joint.

	Cases.	Recoveries.	Deaths.	Per cent. of mortality
Primary amputations after accident . .	59	34	25	42.37
Secondary amputations after accident . .	37	23	14	37.83
Secondary amputations for disease . . .	62	48	14	22.58
Cause and period of amputation undetermined	6	6		
Total	164	111	53	32.31

PHILADELPHIA, March 11, 1868.

Stricture of the Urethra; Retention of Urine; Rupture of the Urethra by the Patient attempting to introduce a Bougie: Recto-Vesical Puncture; Sloughing of nearly the whole integument of the Abdomen and Penis and of two-thirds of the Scrotum; Perineal Section; Variola; Pyæmia; Recovery. By ALBERT L. GIHON, M. D., Surgeon U. S. Navy.

Private C. T., U. S. Marine Corps, æt. 34, was admitted, early in January, 1867, into the hospital at the navy yard, near Portsmouth, N. H., with stricture of the urethra, which had been about a year forming and had recently become so much aggravated that for the preceding fortnight he had urinated only by drops. On admission he stated that about five years before, he had had gonorrhœa, which had not been followed by any sequelæ, and two years afterwards while serving in the army he had a second attack, which affected him severely four months, and did not entirely cease running until two months later. Some six months subsequent to this, he experienced the first very slight obstruction to the flow of urine, which, however, only became apparent after he had gotten wet or had drunk to excess. These attacks became more frequent, the stream gradually diminishing in size until it ceased altogether, the urine being voided only in drops, by great effort, attended with pain.

When admitted into the hospital, he was found to have a stricture at the bulb, which would not permit the passage of a No. 1 bougie. The urethra was excessively sensitive and intolerant of the presence of the instrument. There was considerable irritation about the neck of the bladder. The patient was cachectic and debilitated, from previous hard service in the army, and had been still further reduced by exposure, while on guard during the very severe weather of the month of January at this post, and by recent indulgence in drinking and, probably, sexual intercourse, while on liberty. He was ordered to be kept at rest in a warm room, allowed invigorating diet, and directed to make cold applications to the genitals and perineum.

He had already improved considerably, when, a few days after his admission, he obtained leave to absent himself an hour from the hospital; but he went out insufficiently clad, and, as was afterwards discovered, wandered about in the snow and drank several glasses of ale and hot gin toddy. He returned after having been absent nearly all day, and felt so badly that he immediately went to bed, but made no especial complaint to the attendants. The following day he urinated with somewhat more difficulty than during the preceding week.

January 19. He complained to me, this morning, of excessive ardor urinæ and of severe persistent burning pain in the penis, which was somewhat swollen. His pulse was accelerated; he had occasional rigors; voided during the day forty ounces of urine. Ordered opium in large doses, and applied ice-bags to the pubis and perineum.

20*th.* Scrotum and penis much swollen, distension extending into the perinuem and left groin. The pain had been relieved by the ice-bags, and about twenty ounces of urine had dribbled away and been collected; perhaps as much more was lost. Removed the ice-bags, which kept him shivering, and made numerous deep incisions into the swollen parts, which gave discharge to a serous fluid having no urinous smell, and affording great relief. Applied warm flannel fomentations and administered opiate enemata.

21*st.* Scrotum, penis, and perineum enormously distended and very much discoloured; lower part of the abdomen had also become swollen within a few hours. Urine had constantly dribbled away until eight o'clock this morning, when it entirely ceased. The patient was in a state of great alarm;

his features pinched and haggard; pulse small, thread-like, and too rapid to be counted; breathing hurried and shallow. I at first intended to discharge the bladder by perineal section, but on making an incision into the perineum two inches deep, found such obliteration of structure that I was apprehensive of missing the urethra, and concluded that it would be more certain and expeditious to perform the recto-vesical puncture, and accordingly tapped the bladder through the rectum close to the edge of the prostate, and discharged a very large quantity of dark, turbid, highly ammoniacal urine. Made numerous deep incisions into the swollen parts and cut the prepuce, which was strangulating the glans. Applied warm anodyne fomentations to all the affected parts, and ordered wine whey, beef-tea, and opium.

22*d*. Plugged the canula and emptied the bladder every three hours. There was no discharge from the numerous incisions, which gaped open and were filled with brownish areolar tissue. There had been no subsidence of the swelling of the abdomen, scrotum, penis, and perineum, which were all cold and discoloured. Pulse averaged one hundred and sixty, feeble and very small; with extreme prostration, restlessness, unconsciousness, and dry brown tongue. Gave essence of beef, milk-punch, whiskey, etc., alternately every hour.

23*d*. All the discoloured parts sloughing. Condition generally the same as yesterday, except that he is conscious and able to talk. Complains of deep-seated acute pain when pressure is applied to the abdomen. On being questioned closely, confessed that on the 16th instant, while out of the hospital, he had wandered about several hours in the snow, with some friends, drinking hot gin toddies, etc.; that he was so exhausted on his return, that he immediately went to bed and suffered so much during the night from inability to satisfy his desire to urinate that he attempted to force a bougie through the obstruction, using the only one he could find, a No. 6 flexible metal instrument. After persisting in his attempt almost an hour, the obstruction seemed to give way, and he felt the point of the instrument on the left side of the scrotum near the testis. Passed a large quantity of blood, but experienced such agony from the distended bladder that he was not sensible of much pain at the site of injury, and did not think he had hurt himself seriously. Towards morning, felt relieved, the urine having escaped drop by drop, during the night.

25*th*. Removed a large slough from the scrotum, involving two-thirds of its superficies, completely enucleating the left testis and exposing a considerable portion of the spermatic cord. On the right side, the sloughing was not so deep. Urine now escaping quite fast outside of the canula, which is irritating the bladder. Pulse 160; somewhat harder, wiry; expression anxious; delirium; jactitation; retching, etc. Continued the administration of stimuli.

26*th*. Detached a slough involving the whole sheath of the penis, excepting a small portion on the dorsum of the organ; thin, dark, offensive matter pouring out from the denuded surfaces. The extremity of the canula was causing so much irritation of the anterior wall of the bladder, and urine escaped so freely outside of the instrument, that I determined to remove it; and if the fistula closed, open the urethra through the perineum, the distension of which was rapidly abating. Administered a mild enema, which brought away a large quantity of hardened feces and urine. Pulse small, quick, wiry; skin hot and dry; tongue hard, dry, and brown; features pinched, etc.

27*th*. Discovered a large abscess which had formed over the fifth and sixth ribs on the right side. Observed an eruption of numerous papules over the thorax and above the umbilicus. Lifted off a number of detached pieces of slough from the abdomen, which was tumid and discoloured up to the umbilicus. Profuse discharge of thin, fetid, purulent matter from all the parts which have been destroyed by sloughing. Filled the cavities left by the removal of the sloughs with rolls of charpie moistened with liquor sodæ chlorinatæ, which were removed as they became saturated. Passed very little urine per anum, and complained of much tenderness over the pubis. Kept up the exhibition of stimuli, and repeated the enema, which discharged a mass of feces and a quantity of urine.

28*th*. Patient very low; pulse 140, small, hard; skin dry and burning; mind wandering; restless, etc. Opened the urethra by perineal section, discharging a large accumulation of urine. Papillæ having the appearance of variola very numerous on the body, and scattered less thickly over the head and neck.

29*th*. Removed an immense mass of slough from the abdomen, exposing a space extending from the middle of the eighth rib of the right side obliquely across the body, immediately below the umbilicus, to the extremity of the left floating rib, down to both iliac crests, and, following Poupart's ligaments, to the pubis, showing the white fibres of the muscular aponeuroses beneath; the whole of this surface, as well as that of the denuded penis and scrotum, discharging thin, dark, offensive pus; great constitutional disturbance; small abscesses on both legs.

30*th*. Opened a large abscess below Poupart's ligament on the left side; thin, offensive matter pouring out from every part of the sloughing surface; urine passing freely through the perineum; none through the rectum.

February 1. Has well-marked variola, of which there are two cases in another ward of the hospital; pustules large, umbilicated, distinct, numerous on the thorax and extremities, but not many on the head, face, and neck; urine freely voided by perineum.

2*d*. The extensive suppurating surfaces discharging pus of a lighter colour than heretofore, which requires to be continually swabbed out of the cavities. Sinuses extend up towards the ribs of the left side, below the left Poupart's ligament, and along both cords into the scrotum, and thence into the perineum. Has frequent rigors; pulse quick, corded, somewhat larger; tongue hard, dry, and cracked in the centre, softer on the edges; delirious. Continued stimulation by brandy, quinia, essence of beef, etc., night and day.

4*th*. A broad and painful ulcer formed over the sacrum and coccyx; pulse 120, fuller; tongue cleaning.

5*th*. Variolous eruption desquamating; purulent discharge much thicker, more scanty, and of yellowish colour; ulcers granulating. Kept the cavities and sinuses stuffed with charpie, and where local stimulation was required, as around the body of the penis, saturated the dressing with equal parts of copaiba and glycerin.

7*th*. Granulation proceeding rapidly; left testis covered with granulations, which are also springing up towards it from the bottom of the scrotal ulcer; pulse ninety, softer, fuller; tongue quite clean; able to have his head raised and to watch the dressing of his sores. Urine has been freely voided through the perineum, and to-day began to trickle from the orifice of the urethra.

8*th*. Pulse 82; much less purulent discharge; very much emaciated; appetite ravenous.

9th. A bougie introduced at the orifice of the urethra emerged at the perineal opening. From the latter site, traced a number of sinuous passages, terminating respectively on both sides of the mons veneris, above both Poupart's ligaments, at the root of the penis and behind the left testis. Was able to keep those leading to the abdomen tightly plugged, but urine appeared through the two openings on the penis and behind the testis whenever he made any strong effort.

March 1. The large excavation on the abdomen slowly filling up, and contracting in its vertical diameter. Dressed with lint smeared with copaiba. Left testis completely imbedded in granulations, and non-cicatrizing, the process being retarded by the urinary fistula behind it. Urine freely voided at will through the perineum, and also discharged from the urethra as well as before the accident.

April 1. The abdominal ulcer has almost closed. A minute fistulous opening remains on the left of the pubis, at which a drop or two of urine appears when an attempt is made to close the outlet in the perineum during micturition. The lost scrotum has been almost entirely replaced; the testis being drawn close up to the pubis, he suffers pain, from pressure upon it, in walking. Most of the urine is discharged through the perineum; a small interrupted stream passes by the meatus. On attempting to introduce a bougie, it left the urethra and emerged at the perineal opening. Continued the application of copaiba to the raw surfaces, and bathed the genitals frequently with cold water.

15th. The fistula opening on the abdomen has finally closed. A thread-like stream of urine passes from the meatus; perineal fistula contracting. A bougie enters readily to the seat of obstruction, and then leaves the urethra, and passes, probably along the course of the original rupture, towards the posterior part of the left testis, or descends and appears at the perineum, forming an angle with the channel made by operation, by which most of the urine is voided, showing the existence of at least three fistulous communications around the seat of stricture. Directed him to take daily exercise, to continue frequent applications of cold water to the genitals, and, during micturition, to make pressure on the perineum, to direct the urine as much as possible into its natural course.

29th. All the ulcers have cicatrized. Bougies enter readily to the stricture and are there firmly resisted, those of small size leaving the urethra. The left testis has descended nearly two inches; penis held down by thickened integument. Applied ung. iodinii comp. along the course of the indurations.

May 15. Perineal fistula very small; a continuous stream the size of a fine needle passed by the urethra.

23d. Made a very long and careful, but unsuccessful attempt to introduce a No. 1 bougie into the urethra, inducing so much irritation of the canal, that the following day he was scarcely able to urinate at all.

June 8. Succeeded finally in introducing a No. 1 elastic bougie into the bladder; and before the close of the month, had dilated to No. 6. The outlet of the perineal fistula quickly closed, leaving a cul-de-sac internally, from which a few drops could be pressed after micturition.

July 15. Introduces a bougie himself twice a day; urinates without any difficulty; cannot walk far without suffering pain from pressure on the left testis, which hangs almost as low as its fellow; very little disfigurement of penis and scrotum, the various indurations having been mostly absorbed; integument movable upon the penis. An irregular narrow cicatrix, eighteen inches long, marks the closure of the abdominal sore.

31*st*. His inability to walk long distances unfitting him for the duties of a soldier, he requested his discharge from the marine corps, in order to accept a lucrative situation in a cotton-mill; and he was accordingly discharged, in compliance with his wish.

The past winter was of unusual severity, and many of the men, who after fatiguing guard-duty on the preceding day, trudged through two miles of deep snow to get to their favourite haunts of dissipation in Portsmouth, became seriously ill. About the time the case above narrated came under my charge, two others of retention of urine, occasioned by exposure to inclement weather, also reported to me. One of these suffered so much pain from inability to urinate, that he consulted an incompetent physician in Portsmouth, who, after an unsuccessful attempt to introduce a catheter, had him brought to the navy yard. He was admitted at night, distracted with pain—his bladder so distended, and blood issuing so freely from the urethra, in consequence of the injuries inflicted on it by the instrument, that I expected to have to operate in the morning, but succeeded, by large doses of opium and by constant application of hot flannel fomentations, in inducing sufficient relaxation to enable me to introduce a small catheter. The other man had a severe gonorrhœa when he left the barracks, and returned with a large abscess of the penis, which completely closed the urethra, and when opened, discharged a considerable quantity of pus and urine, leaving a urinary fistula, which required an operation before it closed. When Private T. returned to the hospital, he did not appear much worse than when he went out. I knew nothing of his having been drinking, and was not aware that he had ruptured his urethra by his attempt to introduce a bougie, until the 23d instant, the third day after I had punctured his bladder. He had passed so much urine on the 19th and 20th, that I attributed the increased pain, ardor urinæ, and swelling to inflammation induced by his imprudence in exceeding his leave of absence on the 10th. He was so much relieved on the evening of the 20th by the incisions and local applications, that I had no reason to apprehend the necessity for an operation. During the night he rapidly became worse—and when I next saw him, at my regular morning visit at ten o'clock on the 21st, I at once made preparations for opening the bladder. His case is remarkable for the extent of surface destroyed by sloughing, and for the admirable manner in which reparation was effected. Within five weeks after its entire exposure, the testis had been imbedded in new tissue, and completely covered with cuticle, the new structure subsequently relaxing sufficiently to allow the gland to hang nearly as low as its fellow. The uninjured abdominal cuticle was gradually drawn, as granulation proceeded, towards the pubis and inguinal regions, until only a long narrow cicatrix was left to indicate the longitudinal extent of the parts destroyed. The small portion of the sheath of the penis which escaped destruction, formed a thick fold on the dorsum of the organ, but the patient objected to its removal by operation. His attack of variola was no doubt directly attributable to the use of a sheet or towel, which had been imperfectly cleansed after having been used by one of the other cases of that disease in a ward over head. While the sloughing and infrequent suppuration were going on, he consumed incredible amounts of eggs, milk, beef-esence, porter, brandy, etc., care being taken to administer them only as fast as they were removed from the stomach, and to maintain a regular and constant effect upon the pulse.

U. S. NAVY YARD, PORTSMOUTH, N. H., August 15, 1867.

Case of Intermittent Lateral Chorea (?) successfully treated by Bromide of Potassium. By JAS. P. HASSLER, M.D., of Cochranton, Pa.

I was asked, January 7, 1868, to prescribe for Mrs. H. T. P., a married lady, aged 50, living in the country. The case was reported to me as "the shakes," coming on about 4 P. M. daily. Without a very minute inquiry into the case, I apprehended I had something of a malarial character to deal with, and prescribed accordingly. January 10 I was asked to visit the patient, as she was no better. I did so, and found a very different condition of things from what I had anticipated. She had no chills, and the "shakes" were limited to one side of the body, and consisted of a violent trembling or jerking of the limbs on that side—the arm and hand, leg and foot, shaking as in the worst forms of paralysis agitans. These paroxysms occurred about four o'clock every afternoon, and continued two and three hours, and sometimes even longer. She complained of severe headache, limited also to the affected side, as having preceded and accompanied these peculiar manifestations. There was also some dimness of vision, and numbness of one side of the trunk, and coldness and numbness of the hand and foot. General health good up to time of seizure; patient had ceased to menstruate five years ago. She told me she had an attack precisely similar seven or eight years previously, which lasted between four and five months.

I prescribed ten grains of bromide of potassium every six hours. The next day she had a merely perceptible trembling at the usual hour. January 12, no sign of the paroxysm, though the headache, dimness of vision, numbness, and coldness still remained. A continuance of the bromide for two weeks removed all the symptoms, and restored the patient to usual health.

On Treatment of Pertussis. By W. D. MARTIN, M.D., of Mina, Chautauque County, N. Y.

On reading the account of the treatment of out-patients for hooping-cough in various London hospitals, as reported by the *Lancet*, and copied into the *Medical News* for June, 1867, I was favourably impressed by the *modus operandi* of the remedy used at the St. Thomas Hospital, and having at the time two cases which yielded slowly and certainly to the measures employed as thus suggested, I determined, when a good opportunity should offer, to ascertain if the disease could thus be surely palliated.

Since that time an epidemic of pertussis, in our village and vicinity, brought to my notice a sufficient number of cases to give the treatment a fair commencing trial, and, with the exception of one instance, in which nitric acid was chiefly employed, the entire number in charge received the chloric ether treatment.

The disease, as it manifested itself, differed in no notable degree from its usual order of progression, although it seemed as if its characteristic symptoms were often inclined to appear from the outstart, and, in some who were attacked, the cough, aggravated by the cold winds which blow savagely over this elevated region, was suggestive of great distress.

The formula used is a solution of ammon. acet. f℥ss, spt. nit. ether f℥j, chloric ether f℥ss, oxymel scillæ f℥jss, syrup tolu f℥ij, and aqua q. s. for f℥ij, of which f℥ij every six hours were administered to a child of four years of age, and a liniment composed of chloroform one part and olive oil two parts rubbed on the chest, over the scapular region, and on the back of the neck, morning and evening. Ordinary preliminary treatment and common hygienic rules were laid down for observance.

I will state that in the cases in which I have used chloric ether the effect has been to modify the cough gradually and surely. Sometimes the steady exhibition of the medicine for days together gave no encouraging sign of improvement except to the eye of the professional visitor; but the main object, the early termination of the disease, was apparently always happily accomplished.

Towards convalescence, small doses of fluid extract of hyoscyamus or liq. morph. sulph. were employed in combination instead of chloric ether, and no notable cough lingered in any case.

Explanation. By Dr. W. P. MOON.—My attention has been directed to the remarks, following Case IV., at the top of page 62 in the January No. of this Journal, in which I have inadvertently, and unintentionally, used the plural pronoun, whilst, in the other cases, the singular is used.

I did not intend to have it inferred, as some have supposed, that any of my colleagues had conferred with me in reference to that article. Had they done so, their names would have appeared. The reflections above alluded to are wholly my own, and I wish it to be so distinctly understood.

As I have been led to dwell upon the case, it has occurred to me that it would not have been bad surgery to have placed a ligature around the base of the tumour, at the outset of the venous hemorrhage, as a means of arresting it and giving a better chance to remove the mass.

PHILADELPHIA, 102 N. 15th Street.

DOMESTIC SUMMARY.

Chloroform in Intermittent Fever.—Dr. D. SCOTT, of Bellefontaine, Iowa, has administered chloroform, in intermittent fever, as first recommended by Dr. E. McClellan, in the No. of this Journal for July, 1866 (pp. 271–4), and April, 1867 (pp. 370–6), and he states (*Chicago Medical Journal*, Feb. 1868) that he has carefully noted its effect in upwards of fifty cases, with the following results: "In twenty cases, after the administration of one fluidrachm each, the chill was immediately arrested, with the exception of one case, in which the above dose was repeated in one hour; in eleven of the above cases, the febrile stage was probably abridged; of the remaining cases, the fever ran about as usual, all, with few exceptions, terminating in profuse perspiration; in eight of the cases, the paroxysm returned on the succeeding day, and nine on the second day, and three escaped, but were subsequently attacked in from seven to twenty days: of the remaining cases, no reliance was placed in the curative properties of the chloroform (which I only administered for the purpose of abridging the chill), but was followed by large doses of sulph. quiniæ as soon as the sweating stage was established." In conclusion Dr. S. says that chloroform is a valuable and safe hypnotic in the dose of one fluidrachm, in the cold stage of intermittent fever, and never fails to arrest the chill, the patient falling into a refreshing slumber as described by Dr. McClellan. Dr. S. administered it, like Dr. McClellan, undiluted.

Enlargement of all the Lymphatic Glands.—(Hodgkin's Disease). At page 383 of the present number will be found an interesting case of this, reported by Dr. John J. Black. We find another recorded by Dr. WM. CARSON, in our esteemed contemporary, the *Western Journal of Medicine* (Feb. 1868), and which we quote as an interesting contribution to our knowledge of this affection.

The subject of it was a woman twenty-eight years of age; unmarried, very pale, thin, and feeble, and having the physiognomy of protracted illness. Limbs wasted, breasts hard and disproportionately full, abdomen prominent and tolerably tense. Superficial, uneven and nodulated enlargements or tumours, hard and painless, were to be felt everywhere over the surface of the abdomen, and were evidently enlarged lymphatics. They were more numerous above the

pubis, between the breasts, and towards the axillæ. The mammary glands were also affected by the same deposit. Each nodule was readily defined, the skin was movable over it, and not discoloured. During her early stay in the hospital, and before the effusion into the abdomen became too large, uneven and hard masses were to be felt within the abdominal cavity. They were larger than those on the surface, and grew rapidly. The glands of the neck were also enlarged, but not to the same extent as in the other regions.

The history that she gave of herself was, that she had enjoyed ordinary health until about two months since, when she noticed some changes in her breasts, and the beginning of the small, tumour-like swellings over the lower chest and abdomen. Pains in the abdomen were occasionally felt, and the abdomen began to enlarge, both on account of the irregular and hard growths, and on account of some effusion. Her strength began to fail rapidly, and she had been confined to her bed two weeks before her admission into the hospital.

"The treatment was determined by the two most obvious facts in the case: first, the general cachectic condition and the progressing disease in the abdomen, or rather the secondary effects of it, in producing dropsy. The prognosis was certainly fatal, and probably within a short period. Tonics of various kinds and diuretics were used without effect. Evidences of the implication of the thoracic organs began to appear, in cough with mucous expectoration, and some dulness in the percussion sound of the chest, in limited portions both anteriorly and posteriorly. There was no acute pain, and no great disturbance of the respiratory act. The heart acted feebly but regularly, and without abnormal sound.

"She rapidly sank within three weeks from the time of her entrance into the hospital. The duration of her case, counting from her date of the beginning of her troubles, was about ten or twelve weeks.

"The *post-mortem* examination showed, beginning with the thorax—externally as we have before said—nodulated masses on the surface between the breasts, in the mammæ and in the axillæ, each distinct, and of sizes from an almond to a walnut, with the skin movable over them. The lymphatics of the neck were enlarged. In the cavity of the thorax there were nodules scattered over the costal and pulmonary pleura, of varying size, some quite large. In the parenchyma of the lung were the same, with more tendency to infiltration. The pericardium also had a few. There was slight effusion into the pleural cavities. The heart was healthy. In the abdominal cavity not a single organ escaped. The liver was particularly affected, and contained numerous irregular masses of the same hard, cartilaginous substance, both on its surfaces and in its substance. The spleen was less affected than the liver, and the stomach still less. In the lumbar regions the masses were enormous. The uterus could scarcely be distinguished, and the pelvis was filled with the masses. The mesenteric glands were much enlarged, and the mesentery was almost a solid mass.

"The morbid growths cut with a hard, gristly feel, with rather a dry surface, and had the physical and microscopical appearances of scirrhus. We regret to say we did not make a thorough examination of the enlarged lymphatics."

—

A Dead Fœtus carried to Full Term.—Dr. Markoe exhibited to the New York Pathological Society a still-born and shrivelled fœtus, which was discharged at full term. About the first of January the mother conceived, and went on prosperously until the latter part of May (she being at that time a little past the middle of the pregnancy, and having for several weeks previously felt the motions of the child)—when she was pitched out of her wagon while riding in the country. Although she did not suffer any serious bodily injuries, she was greatly shocked and not a little alarmed; and from that moment did not feel any more motion, all her former symptoms of pregnancy ceasing.

At the end of seven or eight weeks after, she consulted Dr. M., who found her in the enjoyment of perfect health, her abdomen having dwindled down very much, and there being unquestionable evidence of a dead fœtus within her. The os was found large and patulous, but no further examination was made *per vaginam*. Her condition being so excellent, Dr. M. expressed the probability to her that she would go on until full term, when the ovum would be discharged.

About the first of October, having then completed her precise time, she was rather suddenly attacked with severe pain, which lasted but a short time, when the child, with membranes entire, was discharged together. There was no hemorrhage at the time, although a month afterward, when she menstruated, she had a rather violent and continuous flow of blood. The fœtus was as perfectly formed as any child at five months, and only showed the effects of being blighted at that stage of its growth, and subsequently retained so long a time in the uterus.

Dr. POST stated that he had a case precisely similar to the one related by Dr. Markoe. In his patient it was also a dry birth, all the membranes coming away together.

Dr. SAYRE had also met with a case of the sort about ten years ago. The death of the child took place at the third month, but the mother went on to her full period. The labour was a dry one.—*Medical Record*, March 2, 1868.

Dead Fœtus retained till Full Term.—Dr. S. D. MERCER, of Omaha, Neb., records (*The Chicago Med. Examiner*, Oct. 1867) the case of a healthy woman who after hard work, when seven months and ten days advanced in pregnancy, ceased to feel the movements of her child, and was convinced it had ceased to live. She was subsequently delivered at full term of a dead fœtus.

"The child was evidently," says Dr. M. "one of seven months' growth. Sutures were not united, and this rendered the labour very easy. The pains came on very frequent, but were light. The waters were discharged copiously a few minutes before the labor was completed. There was considerable decomposition of the cuticle of the child, but not enough to cause any unnatural odour. The placenta came away very easily. It was small and partially decomposed on the surface that was attached to the womb. There was considerable fatty degeneration of the cord. The mother had a very good getting up, with no untoward symptoms, except an unusual discharge of the lochia, and a subsequent purulent discharge, which has not entirely ceased yet."

[Cases of an early blighted fœtus (both in single and twin conceptions) retained until an advanced period, or even until full term, are by no means rare, and quite a number have been recorded in this Journal, as will be seen by reference to No. for Feb. 1828, p. 480; Feb. 1830, p. 483 (two cases); Feb. 1836, p. 347; Aug. 1837, p. 535; April, 1867, p. 557; present No. p. 550, etc.—ED.]

Treatment of Inflammation of the Limbs by the Compression or Ligature of their Main Arterial Trunk.—The *Cincinnati Lancet and Observer* for February, 1868, contains an interesting article on this subject, by GEO. C. BLACKMAN, M. D., Professor of Surgery in the Medical College of Ohio, the object of which is to contribute something towards the history of this method of treatment, and to exhibit the result in the hands of American surgeons. Prof. B. states that he has "been unable to find the report of any case in which the femoral artery was ligated as a remedy for a wound of the knee-joint, prior to that in which the operation was performed by Henry U. Onderdonk, M. D., on June 17, 1813. The patient was cured, and the case was reported in the *American Medical and Philosophical Register*, vol. iv., 1814, p. 176. A similar operation was performed by David L. Rogers, M. D., of New York, and is reported in his paper 'On the Utility of Tying Large Arteries in preventing Inflammation in Wounds of the principal Joints, with Cases,' in the *New York Medical and Physical Journal*, vol. iii., 1824."

Dr. Rogers, in addition to his own cases, refers to one of compound dislocation of the ankle, in which Dr. Mott ligated the femoral artery. Trismus supervened on the seventh day from the accident (the wound till then doing well), and the patient died. Dr. R. gives the particulars of two other cases which, in his opinion, go to prove that the danger of mortification from defect of circulation is less than might be supposed.

"In July, 1863," Prof. B. says, "after the great battle in front of Richmond, and the retreat of the Union army to Harrison's Landing, on the James River, we had the pleasure of meeting Dr. Rogers at General McClellan's headquarters, and among the first surgical cases reported to us there was one in which the

femoral artery had been successfully ligated by him, or at his suggestion, for a gunshot wound of the knee-joint, and he was warmly advocating the operation in the treatment of such cases.

"Dr. Daniel F. Wright read a paper on the 'Therapeutic Effects of the Ligation of Large Arteries' before the Montgomery County (Tenn.) Medical Society, January 8, 1866, which was published in the *Richmond* (Va.) *Medical Journal*, April, 1866. Dr. Wright states that his attention was first specially directed to the influence upon the pathological conditions of a part exercised by ligating its principal artery in consequence of certain opinions which had been advanced by Dr. H. F. Campbell, of Georgia, who, early in the history of the war, had been placed in charge of the hospitals for Georgia volunteers, established in Richmond, Va. These were afterwards embodied in a work on military surgery, by Dr. Campbell, and which was published under the auspices of the Surgeon General of the insurgent States. Dr. Wright, however, remarks that as Dr. C.'s views are only incidentally mentioned in that work, he should not have appreciated their importance had he not heard him *viva voce* on the same subject. Dr. W. gives the following synopsis of what he, as well as Dr. Campbell, erroneously supposed to be a 'new doctrine:' that the ligation of the principal artery of a member, which is ordinarily supposed to occasion gangrene and necrosis in the parts supplied by the occluded artery, has, on the contrary, a marked therapeutic influence, not only upon tumefaction and unhealthy discharges, but in arresting gangrene and promoting the healing process. He adds that Dr. Campbell supports his doctrine by the history of six cases, for the particulars of which he refers to the work in question. Dr. Wright had at length an opportunity of making his own observations, as he was placed in charge of the second division of Winder Hospital, in Richmond, 'the largest establishment of the kind in the late Confederate States.' He then gives a detailed statement of three out of five cases, which, he says, are typical of the others, and 'confirmatory' of the six cases reported by Dr. Campbell."

In the five cases witnessed by Dr. Wright, he says, "and in the six cases reported by Dr. Campbell, we have this one uniform result, that immediately, from the date of ligation, large tumefaction has been superseded by recovery of the original contour, fetid ichorous discharges by laudable suppuration, and phagedenic gangrene by vigorous granulations, resulting in rapid separation of the eroded tissues."

Prof. B. quotes the following case reported by Dr. D. L. Duvall, of Kentucky, in the *Cincinnati Journal of Medicine*, May, 1866:—

"'After the battle of Chickamauga, September 19, 1863, a soldier received a gunshot wound through the left leg. Ten days after the injury, profuse hemorrhage ensued from the wound, with intense swelling. A watery discharge issued from the orifice, and the cuticle was of a deep, almost purple colour, indicating extensive congestion, inflammation, and extravasation. I adopted Guthrie's mode of procedure, following the track of the wound until the orifice of the bleeding vessel came in view, which proved to be the peroneal artery close to its origin, so close as to preclude the idea of ligating the wounded vessel, thus necessitating the tying of the posterior tibial above the seat of lesion. The surgeon who assisted me was confident, from the condition of the limb and the cutting off of this source of supply, that mortification would follow, and the final result would be amputation of the limb. But, to our surprise, on the third day after the operation the swelling had almost subsided, healthy pus being discharged from the wound, while the cuticle assumed nearly its natural colour, and in ten days more (twenty from date of injury) the patient had so far improved that he was able to be removed to the general hospital, at Richmond, Virginia. How this case terminated, I had no means of ascertaining; but from the favourable condition in which he left the field hospital, I am inclined to believe that speedy recovery followed.'"

Prof. B. expresses his unwillingness to discuss the value of this method of treatment, but states that he would feel reluctant to resort to the ligature, believing it to be a very serious operation, notwithstanding the extraordinary results obtained by the late Dr. Mott and Prof. Syme; and refers, in support of his views, to Mr. Bryant's tables in Holmes's *System of Surgery*, to Dr. Norris's

statistics published in this Journal for October, 1849, and, finally, to Circular No. 6, Surgeon-General's Office, as showing the very serious character of the operation for ligating the femoral artery.

—

Abscess in the Appendix Vermiformis.—In our No. for July, 1867, p. 285, we noticed a case of this in which Dr. WILLARD PARKER, of New York, opened the abscess by an incision, and the patient recovered. About two years subsequently the patient died from another affection, and Dr. G. H. WYNKOOP reports (*The Medical Record*, March 2, 1868) the following appearances as observed on autopsy.

"The appendix was attached by strong adhesions to the anterior abdominal wall, at about the external limit of the right inguinal region. The cæcum was also pretty firmly bound to the wall of the abdomen and iliac fossa by adhesions. The appendix was given off from the cæcum normally, and was four inches in length. It did not lie curled upon itself, but was stretched out along the cæcum and strongly adherent to it. The point of attachment to the abdominal wall was an inch to the right side of, and a little below the cicatrix of the former incisions. The contents of the abscess, therefore, must have worked their way for an inch or more between the abdominal muscles, before they showed any inclination to point. The parts being now removed and examined more in detail, it was found that the entire free surface (that which was attached to the abdominal wall) of the appendix was covered with a thick wall of false membrane which was thickest at about its middle portion. At this point also, the appendix presented a tubular dilatation. Upon dissecting off this false membrane, the appendix beneath presented nothing abnormal in appearance until the point of dilatation was reached. Here was found to be no true wall, the muscular and mucous coats being entirely absent. This dilatation extended three-fourths of an inch down the canal, and that portion of it which was without a true wall was probably one-fourth of an inch in length. Below the dilatation the appendix was normal as to its coats. On opening now the cavity of its canal, it was found to be pervious for two inches and a quarter. From this point for a quarter of an inch, it was entirely occluded, when it was opened again into the dilatation spoken of above. The cavity of the dilatation was filled with a brown mucous secretion. The canal again became obliterated half an inch from the free extremity of the appendix, which from this point was converted into a solid cord.

"That portion of its wall which was attached to the cæcum was normal as to its coats.

"This specimen illustrates most perfectly the *preservative* efforts of nature. It is a full confirmation of the theories advanced in the paper above referred to. Undoubtedly the calculus which escaped when Dr. Parker operated was the exciting cause of the difficulty. By it, inflammation, first of the mucous, then of the muscular, and finally of the serous coats of the appendix, was induced. The inflammation of the two inner coats went on to ulceration and destruction of their substance, and was limited in its extent; while that of the serous coat involved a greater area, and terminated in the effusion of plastic lymph, which glued not only the appendix, but also a large portion of the cæcum to the abdominal wall.

"Furthermore, this effusion of plastic material was not designed for a temporary purpose simply, but having accomplished its end in keeping the contents of the abscess out of the peritoneal cavity, it was destined to remain as a lasting wall for the breach of substance made by the ulceration and destruction of the part."

—

Excision of the Entire Clavicle.—Dr. W. W. DAWSON, Surgeon to the Commercial Hospital, Cincinnati, Ohio, records (*Cincinnati Lancet and Observer*, Jan. 1868) a case of a man twenty years of age, the whole of whose right clavicle was necrosed. Dr. D. made an incision over and down to the bone, and excised it. He found on the outer surface of the first rib a small point of caries, which he also removed with the chisel. The wound slowly healed, and forty-six days after the operation had entirely closed.

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JAMES H. HUTCHINSON, M. D. — D. MURRAY CHESTON, M. D.
H. LENOX HODGE, M. D. — HORACE WILLIAMS, M. D.
GEORGE C. HARLAN, M. D.

The fourth session of the Philadelphia Summer School of Medicine will begin March 1st, 1868, and will continue until October.

Clinical Instructions will be given from the first of March to the first of October.

Lectures and Examinations will take place daily during April, May, June, and Sept.

EXAMINATIONS.

ANATOMY, CHEMISTRY, PHYSIOLOGY,
SURGERY, MATERIA MEDICA, OBSTETRICS,
PRACTICE OF MEDICINE.

OPERATIVE AND MINOR SURGERY.—Lectures and Demonstrations of Bandaging and Dressing of Fractures upon the Manikin and of Surgical Anatomy and Operations upon the Cadaver, by H. Lenox Hodge, M. D.

PERCUSSION AND AUSCULTATION IN DISEASES OF THE LUNGS AND HEART.—Lectures and Clinical Examination of patients, by James H. Hutchinson, M. D.

MICROSCOPE.—The structure of the Microscope, and the manner of using it, will be explained, and the microscopical appearance of the tissues and fluids in health and disease will be exhibited, by Horace Williams, M. D.

URINARY DEPOSITS AND TESTS.—Students will be instructed in the microscopical and chemical examination of the urine, and will be enabled to make themselves familiar with the necessary manipulations, by James H. Hutchinson, M. D.

MATERIA MEDICA.—Lectures by Robert Bolling, M. D.

DISEASES OF THE EYE.—Lectures upon the Anatomy, Physiology, and Diseases of the Eye, by George C. Harlan, M. D.

DISSECTIONS AND SURGICAL OPERATIONS may be practised by the members of the class.

THE SOCIETY OF THE MEDICAL INSTITUTE meets once every month.

CLINICAL INSTRUCTION.

PENNSYLVANIA HOSPITAL.—The advantage of attending the Lectures, Operations, and Clinical Examinations of patients at this important hospital will be secured without charge.

EPISCOPAL HOSPITAL.—Drs. Hutchinson and Smith will take the class through its well-arranged wards, so that by the bedside disease may be accurately studied.

CHILDREN'S HOSPITAL.—Much of a physician's practice being among children, it is essential that their various disorders should be seen by the student. Drs. Hodge, Hutchinson, and Cheston will, during the session, have charge of the numerous out-door and in-door patients of this establishment, and will offer every facility to the class.

DISPENSARY FOR DISEASES OF THE HEART AND LUNGS will be conducted by Dr. Hutchinson in connection with his lectures.

FEE FOR THE WHOLE COURSE . . . FIFTY DOLLARS.

Or any part may be taken separately.

OFFICE STUDENTS will be received by Drs. Bolling, Hutchinson, and Hodge, for the whole or part of a three years' course of study. They will be admitted to the Summer School and to the Winter Examinations, and Clinical Instruction will be provided for them at the Pennsylvania, Philadelphia, Episcopal, and Children's Hospitals. They will be given special instruction in the Microscope, Practical Anatomy, Percussion and Auscultation, Practical Obstetrics, Bandaging and Operative Surgery. They will be enabled to examine persons with diseases of the heart and lungs, to attend women in confinement, and to make microscopical and chemical examinations of the urine.

WINTER COURSE OF EXAMINATIONS will begin with the Lectures at the University of Pennsylvania in October, and will continue till the close of the session.

Candidates for admission to the Army and Navy, and those desiring promotion to a higher grade, may obtain private instruction.

Fee for Office Students (one year) $100
Fee for one Course of Examinations 30

Class-Rooms, No. 920 Chestnut Street. Anatomical and Surgical House, College Avenue.

Apply to H. LENOX HODGE, M. D.,
N. W. corner Ninth and Walnut Streets, Philadelphia.